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Editorial Consultant: Leslie M. Slatte

Business Staff

General Mgr.: W. S. Kline

Advertising Mgr.: Charles L. Dermott

Western Adv. Mgr.: William S. Hutchings

Office Mgr.: Edith Pagnotta

Advertising Offices

New York 17—141 East 44th Street, MU 7-0583
Chicago 11—612 North Michigan Avenue,
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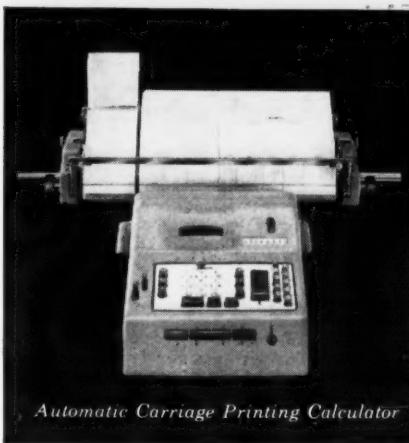
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Policy re manuscripts: The object of MANAGEMENT METHODS is to offer "practical solutions to management's problems." For that reason we never highlight a problem without offering at least a partial solution or a recommended course of action. Whenever possible, we like to offer the reader something he can do right now to correct a procedure or solve a problem in his business.

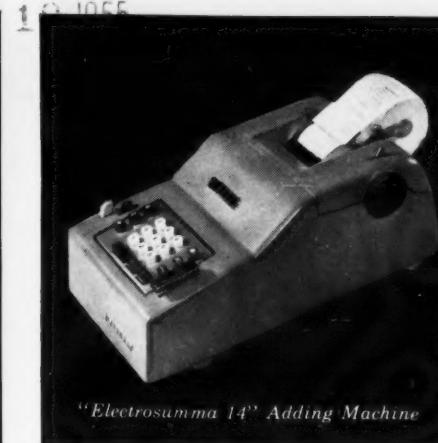
Much of our editorial material comes from business and management specialists as well as from active businessmen at all levels of management.

Most articles employ case histories. An article may be based on a single case history or can be built around a group of related case histories. We like to mention the name of the user company involved in each case history and, when possible, to quote an officer of the company.

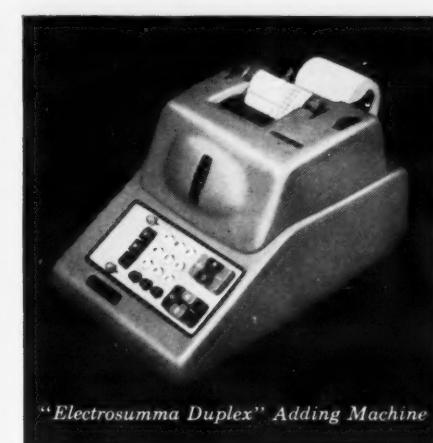
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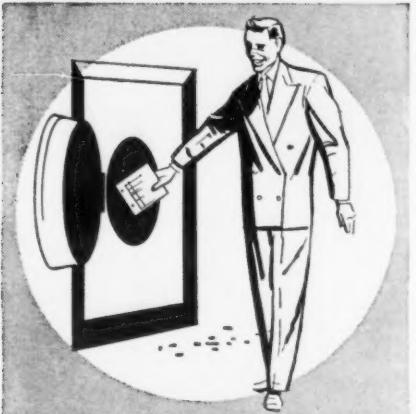
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consensus

ELECTRONIC BRIEFS WORTH REPEATING

How fast does it pay for itself?

Dear Mr. Editor: I read with a great deal of interest your article in the January issue entitled "What Management Should Know About Electronics for the Office."

One thing that has me puzzled is your statement . . . which reads, "The price of electronic data processing equipment is consistent with its ability to provide a proper rate of return. Example: a \$1,000,-000 computer system will pay for itself in three to four years, if it replaces only fifty clerical employees."

\$1,000,000 is a lot of money. I was just wondering how you figured that amount could be recovered in three to four years, if the equipment replaces only 50 clerical employees. On the basis of \$4,000 a year each, or \$200,000 for the entire 50 in one year, only \$800,000 would be spent in salaries in four years, leaving a deficit of \$200,000. Are there other factors that govern your thinking which I may have overlooked and which may materially affect operating costs? In other words, just how did you arrive at your conclusion of this \$1,000,000?

J. D. ANDERSON, Manager, Systems and Procedures, Sunbeam Corp.

Using the example of \$4,000 a year salary, which is probably high as an average, it is still necessary to add the cost of fringe benefits, space, utilities, and supplies and equipment. We believe this comes to a total cost of at least \$5,000 a year per employee. In many cases, individuals being replaced by electronic equipment have high skills and high hourly rates. They include Comptometer operators, IBM technicians, etc. In addition,

these people must be supervised—another "hidden" cost. ED.

Fast pay-out on investment . . .

A record rental fee of \$3,800,000 a year is being paid by Prudential Insurance Company to IBM for their electronic system. Prudential will use it to calculate commissions to agents, to compute risks, in addition to many other operations. It will replace 200 clerks formerly needed in one department.

Labor ready to fight

CIO wants a major Congressional investigation to force open the books of such leaders in automation as General Motors and General Electric. They want to show how much automation has eliminated labor and kited profits.

United Automobile Workers, CIO, is going to make automation a central issue in its upcoming drive to win a guaranteed annual wage from the car industry. This is likely to be one of the most crucial labor fights since World War II. DOUGLAS LARSEN, NEA Staff Writer, New York World-Telegram & Sun

No more payroll peak periods

General Electric's UNIVAC will be used to turn out pay checks for 15,000 workers. Time card information is fed in on magnetic tape—a one-girl operation. Six hours later, with infinitesimal errors, checks for all 15,000 employees will be printed.

John Hancock gets its computer

On December 8, 1954, the first of a new type of "business minded" electronic brain went into opera-

tion in the offices of the John Hancock Mutual Life Insurance Company. Technically called an "electronic data processing machine, type 650," it is number one of more than 400 scheduled for delivery in the next 2 years by IBM.

Within an hour after the machine was delivered, it was at work testing a new system for the calculation of commissions involving more than 7,000 John Hancock agents around the country.

Other work already translated into machine language by John Hancock experts, and nearly ready to go, includes policy valuation distributions, the preparation of mortgage tables three years in advance, and the computation of cash values and dividends for over 300,000 policies every month. The latter job reduces the number of steps in former accounting procedures by more than 80%.

According to Abram T. Collier, personnel vice president, "This machine is a welcome addition to our staff. Without the steady improvement of office machines and procedures, thousands of additional people would be required to do the most routine work."

Hancock's vice president says . . .

" . . . I have not yet touched upon the personnel problems which evolve out of (electronic installations). We all know that any realignment of function or the introduction of radically new procedures results in a considerable displacement of personnel. Many jobs change in content so drastically as to be unrecognizable, others disappear entirely, their functions being either eliminated or absorbed.

At the clerical level, while this presents some difficulty, that difficulty can be handled. Clerks can be restrained for the new procedures and any necessary reduction in clerical quotas can, under ordinary circumstances, be taken care of by the normal turnover most of us experience.

The real rub, however, comes

about through the changes in supervisory requirements. All of our companies have numerous section heads, supervisors, and perhaps even division managers who have spent their whole working lives developing the experience, knowledge, and skills necessary to the positions which they have attained. What happens to them when new procedures or large-scale mechanization programs either require completely different skills or knowledge, or worse yet what happens when these changeovers completely eliminate these supervisory positions? What responsibility does company management have toward these individuals?

I don't believe we have developed any final and satisfactory answers to these questions as yet. Certainly, we have a great responsibility toward such individuals, who for so long a period, were the backbone of our organizations. Everything must be done within the limits of possibility to train these people for new assignments. If this is not practical, I feel that we have an obligation to find new and interesting work for such individuals without impairing their opportunity for advancement, while at the same time providing them with that recognized job essential—work satisfaction."

NOEL S. BAKER, Vice President, John Hancock Mutual Life Ins. Co.

New electronic inventory machine

A new electronic business machine by Electronics Corporation of America—"Magnefile, Type C"—is designed to keep perpetual inventory and record withdrawals and sales without the use of cards, tape, or other external media. It is designed for use in any business organization where fast turnover necessitates accurate, perpetual inventory records on a day-to-day or hour-to-hour basis. It performs a number of important and useful business accounting functions, such as payroll accounting, sales analysis, production scheduling.

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RUDD-MELIKIAN, INC.

CREATORS OF AN INDUSTRY

(Circle 308 for more information)

consensus . . .

continued

department store, for example, it maintains, in its magnetic memory, complete inventory information on 10,000 different items; it reads a tag which the sales clerk has removed from the item just sold, completely identifying the item; it figures out the total price for the quantity the customer has purchased; it adds Federal and local taxes; and it automatically typewrites a complete sales slip,



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Booklet explains new language

Many businessmen are baffled by, and a little impatient with, the growth of "engineeringese" language. One firm, whose own automation engineers have contributed heavily to this polytechnical polyglot, decided to try and clear up some of the confusion. Surveying the technical terms most broadly used, the Industrial Division of Minneapolis-Honeywell packaged them in a modest "Automation Dictionary" complete with very clear, layman-like definitions.

For a free copy, circle number 398 on the Reader Service Card.



Rudd-Melikian, Inc.,
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sales ideas

How to select sales personnel

Four million persons are employed in sales jobs in the United States today—an average of one out of every 16 employed workers, according to Industrial Psychology, Inc., national psychological research organization. Considering this sizable number of sales personnel, plus their importance in the profit-loss structure of a company, good selection methods are an essential.

Four job categories can be designated under sales personnel, as indicated by psychological standards: the sales clerk, or *order taker*; the salesman, or *order seller*; the sales engineer, or *order consultant*; the sales supervisor, or *order coordinator & administrator*.

The *sales clerk* carries out job assignments of a simple, routine, and repetitive nature. More stress is on the clerical aspects of the transaction than on the sales or persuasive aspects. In terms of the psychological requirements, the paper-work aptitudes of perception and systems show up as important. An extroverted personality is necessary, though not at the same level as the salesman. Appearance, plus general maturity and stability, are required in sales clerks, as in other sales classifications. Only a short training time is required to reach sales clerk proficiency, providing the trainee has the right amount of the sales clerk aptitudes. This job is often the entry job in the sales field—though not always correctly so for salesmen who are persuasive-oriented and have a dislike

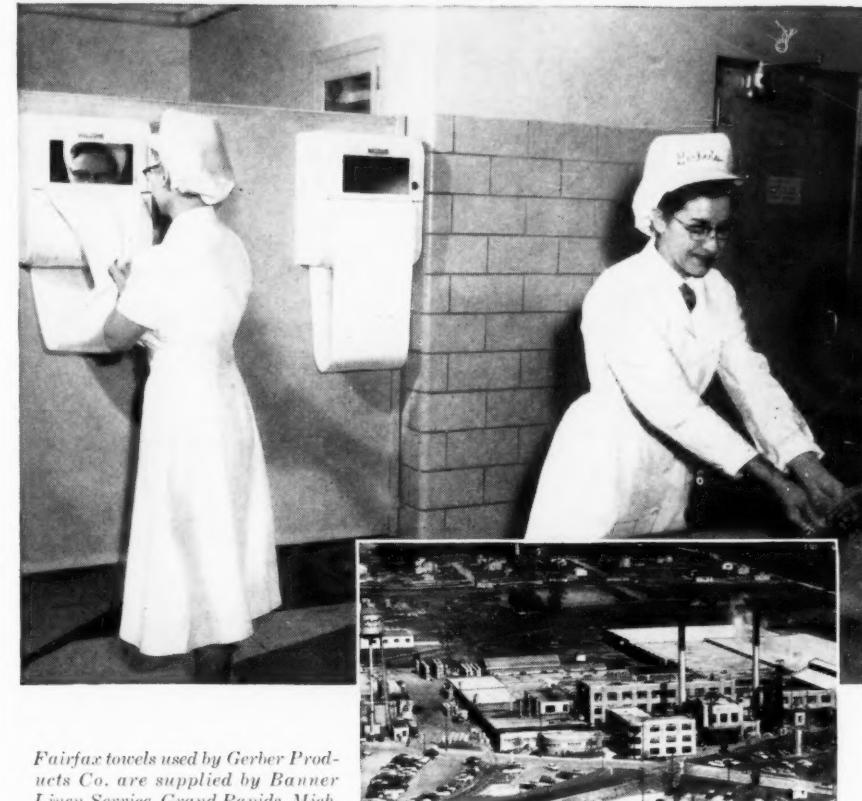
for paper work and details.

The *salesman* job, from a psychological standpoint, is also a fairly routine, repetitive, and detail assignment. High intelligence for salesmen is not desirable; and overqualification is an easy mistake to make in hiring a sales force. As contrasted to the clerical *order taker*, however, the salesman is an *order seller*. More stress is on the sales-contact aptitudes and personality traits, than on the paper-work aptitudes. Successful salesmen score above the general population on such personality traits as cooperativeness, dominance, enthusiasm, gregariousness, conventional attitude.

The *sales engineer* is a specialist in a particular and fairly complicated product. He serves in an engineering or consulting capacity. Stress is on the technical aptitudes, more than on the sales or paper-work aptitudes. The sales engineer needs more intelligence than the salesman. His personality traits do not have to be as pronounced as the salesman, but he does have to have the extrovert syndrome. Any engineer is not, by definition, a sales engineer—the statistics are that about one out of ten engineer graduates have the personality and temperament to be sales engineers.

The *sales supervisor* is a line administrator—dealing with, directing, and coordinating projects and personnel; organizing and expediting work; getting things accomplished. His main task is predicting and controlling peo-

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(Circle 257 for more information)

ple. He needs more of the aptitudes than any of the other sales classifications, with particular stress on judgment and organization abilities. His personality structure is different from the salesman, with emphasis on traits such as expressiveness, super-ego strength, participation, self-sufficiency, and will-control.

Personnel evaluation has progressed sufficiently that a number of these basic sales traits can be spotted by psychological tests, administered by the company before the applicant is hired. Three types of screening forms are recommended by Industrial Psychology:

Biography. An application-type form, in which the applicant is asked 119 questions; and for each question, four answers are given. He selects the answer that fits him. A scoring method assigns weights to his answers and provides a total score. The salesman who scores 186 points is a better risk in terms of his biographical habit patterns than the salesman who scores 42 points. The form is also used as a guide in the interview. Tailored forms are available for sales and supervisor areas.

Aptitude Job-Tests. This series of tests gets at the aptitude (or brainpower) which the applicant has, to learn and perform the sales job. From five to seven tests are used in order to get at the various types of intelligence involved in sales assignments. Special combinations of aptitude tests have been researched out for the four job categories.

Personality. A good deal of "cold water" has been thrown on the field of personality evaluation in business and industry. One reason is that personality measurement has generally not followed basic factorial design in test development. Personality research, based on sound factorial test construction, is now being applied to sales prediction. Two tests which have particular significance in sales selection are the extrovert-introvert test, which gives a measure of the applicant's personality to do contact work, and a longer personality factor test which provides weighted scores on 16 basic factors to indicate personality structure for salesmen, sales engineers and supervisors.

For further information on the screening and selection of sales personnel, in terms of the psychological tests to use and how to install them, circle number 397 on the Reader Service Card.



Management's job must be defined by function — not title — to get results

by Leslie M. Sloté,

Ass't to the Pres., Norden-Ketay Corp.
Management and Labor Relations Consultant

Editor's Note: This article is not a study of organizational charting. Rather, it details the place and importance of organizational planning and is a practical excursion into the field of "managing management."

Here is a scene that could occur in almost any "well run" manufacturing concern. Customers are clamoring for deliveries. The President sends for the Factory Manager. Five other people soon become involved and the conversation resolves itself into the following boiled-down version:

PRESIDENT: "Why aren't we shipping our new model in the Z line?"

FACTORY MANAGER: "We're all set to go in production, but are waiting for the balance of the tooling. Purchasing was supposed to have it in the plant 3 weeks ago."

PURCHASING AGENT: "Production Planning didn't requisition far enough in advance."

PRODUCTION PLANNING SUPERVISOR: "Product drawings were released late by Engineering."

CHIEF ENGINEER: "Sales wanted some changes."

SALES MANAGER: "It wouldn't have sold the way Engineering designed it."

The chain reaction of each department manager blaming the next for the inability to meet a production deadline is not so much the old familiar story of "passing the buck," as it is an example of carelessly divided responsibilities, and no over-all coordination to attain objectives. Although clear-cut goals were actually set up and the desire for teamwork is there, *the desired end results just don't always happen.* Regardless of the excuses given, production and shipments are off—not to mention the effect on profits and costs. The question is, why did it happen?

Basically, failure is due to lack of sound organization planning. But don't confuse the organization planning with organization charting. The organization chart shows "chain of command"—not "chain of function." It's a static profile of management structure. The primary purpose of organization planning is to get the work out—that is, to get the job done.

What is described here is a practical approach to this latter method. It is based upon activity analysis. It is not intended to eliminate the familiar

organization chart. The organization chart, with its complex maze of rectangles and connecting lines, depicts structural framework, while activity analysis shows what has to be done within this framework to complete a job, and specifies exactly which people are to handle each step.

Any size firm can use it

Activity analysis applies to all types of businesses regardless of size. The larger firm will show more specialization of functions with highly detailed breakdowns, and work assignments to many more individuals. The very same functions that are performed in the big corporation exists in the smaller organizations, too. The only difference is that they are combined and performed by fewer individuals.

To illustrate, take the case of a "one-man organization" familiar to all of us, the corner drug store. The marketing functions exists here with all its phases of market research, analysis, and appraisal in order to develop customer requirements and sales forecasts. Chances are, the proprietor may not even recognize the marketing function as such, and may even deny that it exists in his small organization. But he

has to know his trade, which products and price lines will sell, how much of each to stock, how to promote sales, and what to expect in the way of sales volume on each product. Similarly, the production function of supplying goods and services is also present, as are the financial function of capitalization, budgeting, accounting, and reporting.

It is important to recognize that organization "planning" has been accomplished, of necessity, in every going business. The structural framework and complex inter-relationships of personnel and functions exist, whether they are planned or not, however wrong or inadequate they might be.

I recently completed a survey of nineteen different companies to determine what they were doing with organization planning. Included were the following general categories:

Manufacturing—7

Electronics, control instruments, machine tools, office equipment, and home appliances.

Wholesale Trade—5

Covering various combinations of manufacturing, subcontracting, and marketing operations.

Service Organization—3

Banking, and insurance.

Mining—3

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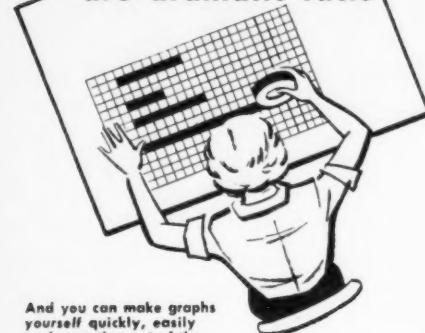
Public Utility—1

Electric power company.

In all cases, organization planning (though often called by a different name) is a centralized staff function with relatively little participation by operating executives. The usual effort is directed towards the production of detailed organization charts and an organization manual carefully delineating authorities and responsibilities. While the effort is commendable, it seldom achieves sufficient applicability to daily operating priorities that claim a busy executive's time. As a result, it becomes little more than an academic exercise—it remains a staff "baby" that never quite grows up. (next page, please)

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ACTIVITY ANALYSIS CHART

Administrative goal

To coordinate sales requirements on the Z-line with factory operations through market research and analysis, sales forecasting, engineering the product, planning and scheduling production, and related functions.

Actions required

| Ref. | Basic Functions | Reference | Sub-Functions | Dept. |
|------|---|-----------------------------|---|---------------|
| 1 | Develop customer requirements and sales forecasts on each product in the Z-line. | 1.1 1.11 1.12 1.13 | Market research and analysis to forecast and evaluate territorial operations; and to prepare plans for marketing strategy. Conduct field research and define markets for each product in terms of sales opportunities (used as basis for company quota operations). Develop strategic marketing plans, establish definite quotas and budgets by products, territories, time periods, etc., to attain a pre-determined profit on sales, manufacturing, and financial requirements. Inspect and appraise all marketing plans, sales quota and budget performance, and act as a check on market research operations. | Sales |
| 2 | Produce and ship products in accordance with Sales Dept. schedules to fulfill customers requirements. | 2.1 2.11 2.12 | Engineering research and development to plan the designs and processes required for manufacturing the product. Conduct research in technical subjects to keep products and processes in advance of such trade requirements as cost, utility, efficiency, appearance, etc. Design products and manufacturing processes to conform with product and process research to meet marketing requirements with respect to price and quality. | Manufacturing |
| 2.2 | | 2.21 2.22 | 2.121 product design and specification; build prototype; revise product design; furnish bill of materials, drawings and specifications. 2.122 design operations sequence and set standard times for each operation. 2.123 specify tooling required. Manufacture the product according to the designs and processes prepared by Engineering. Provide required tooling, facilities, materials, etc., needed for scheduled manufacturing operations. Provide required personnel. | Engineering |
| 2.3 | | 2.31 | Inspect and appraise all expenditures and results of manufacturing operations. Plan production schedules and budgets for all mfg. operations. | Methods |

Overall coordinating responsibility
Office of the Executive Vice-President

Delegated responsibilities

| Dept. | Echelon | Position |
|---------------|---|---|
| Sales | Dept. Head | V.P.-Director of Sales |
| | Div. Head | Manager of Market Research |
| | Sect. Head | Supervisor of Market Research Operations |
| | Sect. Head | Supervisor of Marketing Plans (may be same individual as above —1.11.) |
| | Sect. Head | Supervisor of Market Analysis (may be same individual as above —1.11 and 1.12) |
| Manufacturing | Dept. Head | V.P.-Director of Mfg. Operations |
| | Div. Head (Engineering Research and Devel.) | Chief Engineer |
| | Sect. Head (Product and Process Research) | Sr. Project Engineer |
| | Sect. Head (Product and Process Design) | Sr. Project Engineer |
| | Unit Head (Production Engineering) | Project Engineer |
| | Unit Head (Production Engineering) | Project Engineer |
| | Unit Head Div Head | Project Engineer Factory Mgr. |
| | Sect. Head | Purchasing Agent |
| | Sect. Head | Personnel Manager |
| | Div. Head | Mfg. Control Manager |
| | Sect. Head | Prod. Planning Supervisor |

Emphasize "activity"—not position

How can organization planning be made practical? *Primarily, through activity analysis, rather than position description.* Position description only covers the activities of a single person, while the activity analysis approach to organization planning outlines the authorities and responsibilities of every person participating in a given activity from start to finish. The chart at the left is only a portion of what an activity analysis chart would look like, with many of the steps omitted for purposes of clarification. Although the example given is broad in scope and concept, and cuts across departmental lines, these charts would also be used within the department itself to detail the functions and responsibilities of divisions, sections, and units to complete establishing effective controls.

The charts are flexible; they may be as broad, or as specialized and detailed, as required. Basically, the left-hand portion of the charts show all activities and functions necessary to achieve the desired administrative goal, while the right-hand part assigns specific responsibilities. As a last step, the responsibilities for each position are abstracted and transferred to individual position descriptions. As position descriptions are developed in this manner from different activity analysis charts, an organization manual is gradually built up as a *by-product*, rather than a primary objective, and, therefore, is a control in assigning responsibilities.

The activity analysis approach to organization planning and control produces positive results by simplifying activities, eliminating duplications, filling in omissions, etc.

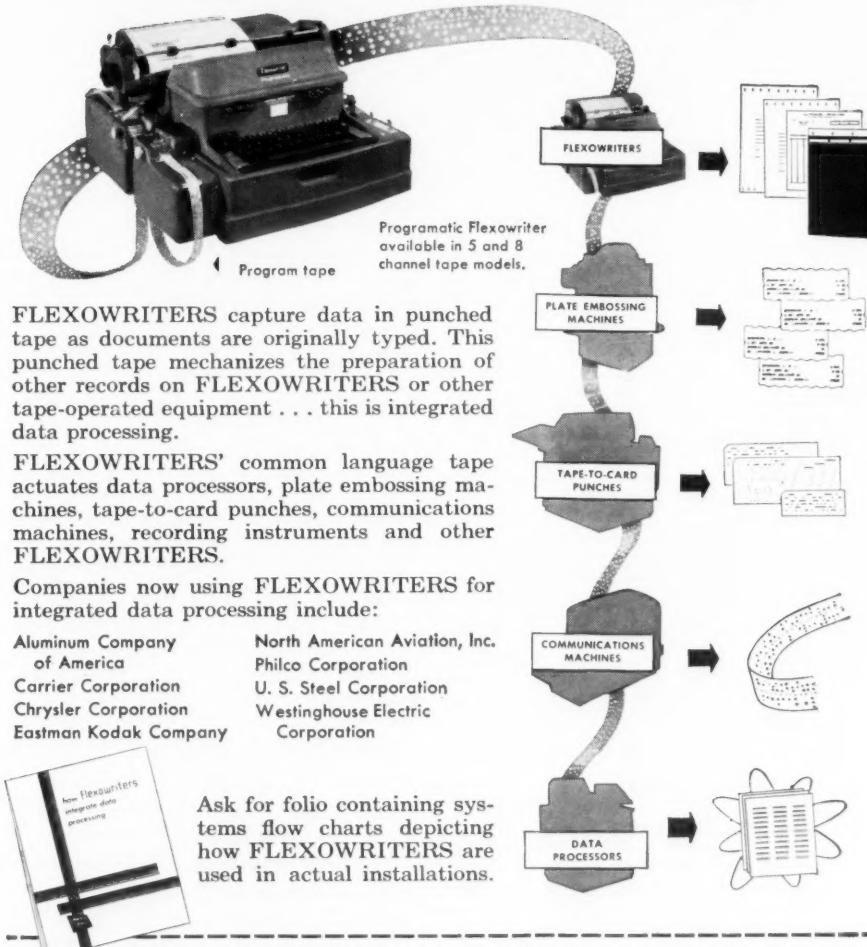
This approach to organization planning is unique and deserves wider recognition. I have used it in numerous and diverse applications with consistently successful results. In the survey of 19 companies mentioned earlier, the most frequently encountered obstacle was the lack of understanding on the part of division heads, department heads, and top executives regarding the meaning and application of organization planning. It was found that ideas were either outmoded, were incorrect due to sheer guesswork, or expressed

cavilulation to internal politics. In most cases, the concepts of any one operating executive were generally unacceptable to other executives due to lack of understanding, so that anyone attempting to conquer the hazards of organization planning was literally faced with insurmountable obstacles. The problem is one of seeking a common denominator for purposes of communication. This has been solved by training key personnel in the techniques of organization planning through the activity analysis approach.

A few of the leading universities offer courses in organization planning. For

example, N.Y.U.'s Division of General Education offers an outstanding course under the chairmanship of Professor Harold A. Finley. However, companies have almost universally ignored the value of in-plant training of its key executives as a group in the phases of organization planning relating to their daily operating responsibilities. Actual participation, under competent guidance, is one of the best means of providing a common basis of such understanding. Key personnel can thus become adept in the use of this valuable tool to enable them to solve everyday operating problems successfully. m/m

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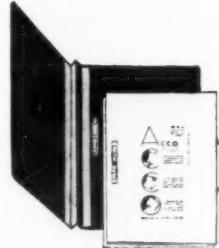
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capsule HUMAN RELATIONS reports

1 Should the boss work with the workers

Providing workers with MORE WILL TO WORK

EDITOR'S NOTE: A tremendous amount of research is being done today on human behavior. Behind this research looms the fact that human beings are the most expensive (and valuable) of our business assets. Unfortunately, much of this social research is being done by groups working independently of one another. Findings are not always published. Significant facts are often buried in long and highly technical reports. In addition, many of the researchers are reluctant to have their findings "popularized" by untrained observers who may distort them.

With these facts in mind, we have arranged with Dr. Donald A. Laird, an Industrial Psychologist, to collect and author the series of Human Research Studies we will publish in subsequent months. Dr. Laird was formerly head of the Psychology Department at Colgate University, and Director of the Colgate Psychological Laboratory. Later, he was appointed Director of the Ayer Foundation for Consumer Analysis, in Philadelphia.

The numbers that appear in parentheses refer to source material texts. These are listed under "Bibliography" on page 19.

ARE THE WORKERS more likely to reach a higher goal if the boss rolls up his sleeves and helps out at the bench beside them? The chart shows what happened in groups of semi-skilled office clerks and railroad laborers. Altogether there were some 600 workers, and 84 first-line bosses.

Half of these bosses spent more time supervising than helping out in actual production. The other half of the bosses spent most of their time working directly on the job, the same as the workers. The bosses who had the high output crews, were mostly those who did *not* do much of the production work themselves. But with the low production crews, it was the opposite—most of their bosses pitched in to help get out the work. (1)

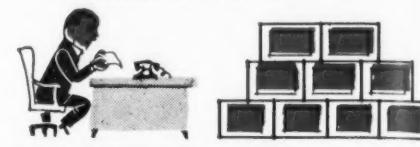
This is difficult to believe at first. The crews were small, only about eight persons under one boss. When the bosses worked side-by-side with them, the crew strength was increased considerably. Yet it cut down output. How could that be?

One obvious reason is the workers' feeling that the boss lacks confidence in them, so he is working beside them. Or, they feel he is dissatisfied with the way they are doing the job, and their anxiety is aroused. They may also get the idea he is trying to set a faster pace for them. Workers commonly resent a boss "sticking his nose" into their work. All these feelings cut down the will to work, and make some of the workers jittery.

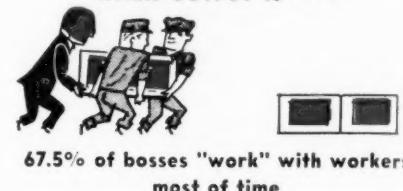
Another reason is less obvious, but it is more important in connection with helping the work group reach their goals. This reason is tied-in with the social forces that are active in work groups. Some of these social forces lead members to feel that they will reach their goals better if they have a leader, not merely another part-time worker. It is a truism that groups want a leader, although they may not want the particular one they happen to have.

Group members expect this leader they want to perform different operations from the rank-and-file. They expect the boss to

WHEN OUTPUT IS HIGH



WHEN OUTPUT IS LOW



play a different role, not to do routine production. They expect him to facilitate their efforts and give them support toward reaching their goals. (2)

The work group expects their leader to: Have materials on hand when needed (*An Expediter*).

Get them good tools and surroundings (*A Retriever*).

Co-ordinate the members of the crew (*A Smoother-Outer*).

Help them solve personal problems (*A Counselor*).

Help them solve job problems (*A Consultant, or Expert*).

Keep them informed about what's cooking (*A Communicator*).

Defend their interests (*A Protector*).

Develop their skills (*A Trainer*).

They also expect the leader, if he is a successful one, to work harder and longer than the followers, but at those functions which they expect the leader to perform, not at the routine of their own jobs. (3)

In brief, workers expect the boss to be a specialist who helps them reach some goals. These specialties are in two broad classes: mobilizing the human resources within the group, and mobilizing the materials needed to reach the goal.

2 What happens when the boss lacks authority

We have seen how the followers expect their leaders to have "higher" duties, duties which are not done by the rank-and-file. These "higher" things include looking after the interests of individuals, as well as of the crew as a whole.

In terms of a work group, for example, this means going to bat for the crew; seeing that materials or equipment the group feels they need is provided so they can make headway; and settling complaints and grievances.

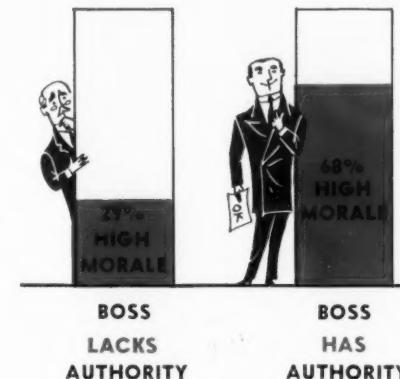
But the records indicate that going to bat is not enough. This finding came out in the analysis of the morale of 8,000 of the workers in a metropolitan electric firm. The over-all satisfaction, or morale, of the workers was checked against many of the first-line bosses' actions. Perhaps the bosses who used the most human relations methods would be found to have crews with the best morale.

The records didn't come out that way, however. Some of the foremen who used good human relations procedure did have high morale crews. But other bosses, who used about the same methods, had low morale workers.

So the investigators looked into another angle. Some of the bosses had influence with their higher-ups. The investigators found that when these bosses with high influence went to bat, they usually got what they wanted for their workers. Their workers felt that such a powerful boss could help them reach some goals, and this outlook seemed more satisfying.

But there were other bosses who seldom got an O.K. from the higher-ups. These low influence bosses couldn't make good on their promises to the men, though sometimes they foolishly promised too much. Generally, they simply lacked the weight to get management to approve their recommendations.

The chart shows the result this difference in influence seemed to have on morale with the blue-collar workers. There was no real difference in the human rela-



tions methods of these foremen. What counted was that some had (or could get) the authority to do the extras that helped their work groups feel they could get somewhere. (4)

The relationship in the case of the white-collar workers was about the same. Morale was highest where the immediate boss could make good on his promises and not have the rug pulled out from under him by his chief.

Experiments supported by the Research Institute of the University of Oklahoma have also revealed that followers have great expectations from the people they consider leaders in their groups. The followers greatly over-estimated how well these leaders could do a simple act of muscular skill, and they also under-estimated the same skill for people they shunned as leaders. Feeling the leader has super-man qualities relieves anxieties. (5)

As companies have grown larger, there has been a tendency to "tighten the organization." A favorite way of doing this is to take some of the authority from the first-line bosses and give it to a staff expert. Nowadays, the first-line boss may not have the authority to adjust complaints, for instance. Similar limitations on his power have, in many instances, whittled-down his size in the workers' eyes so they doubt if he can really help them make headway.

Bibliography on page 19

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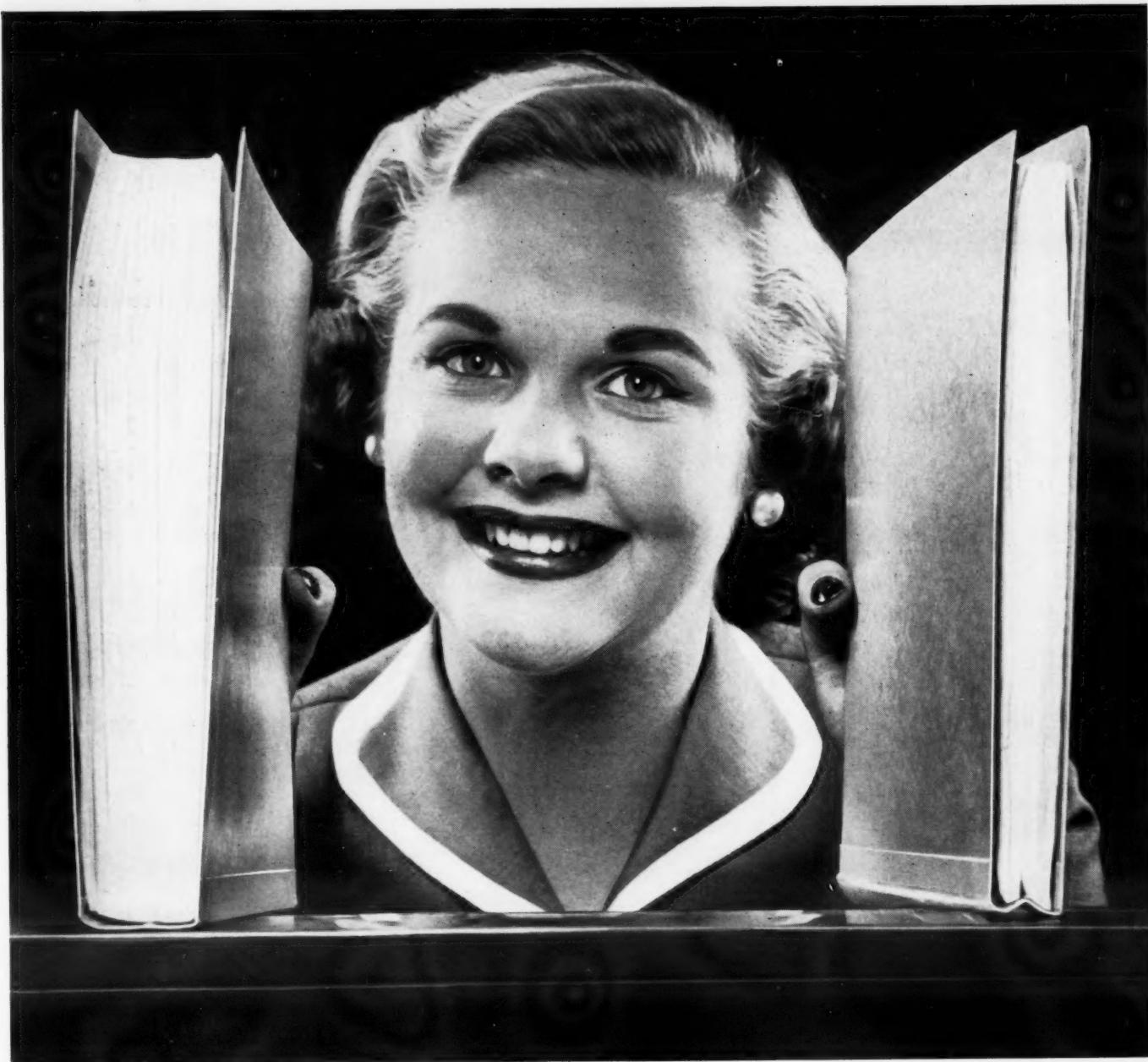
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Do workers do better with a

NDIVIDUALS, AS WELL as groups, make more effort to succeed if they see they are achieving something in the direction in which they are headed. This principle has been extensively applied by consultants of the National Institute of Industrial Psychology in the spectacular output gains they have brought about in British factories and offices. The chart summarizes the case of some girls who were preparing fruit in a marmalade factory. (6)

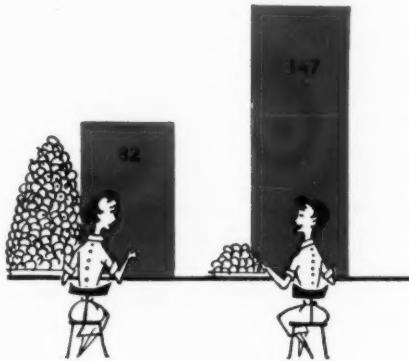
Their output fell under the original scheme, when a day's full work was piled in front of each girl at the start of the day. This huge backlog made the job seem like an endless activity that got nowhere slowly. Then one change was made. The girls were given a small tray of fruit to work on at a time. This seemingly slight change almost doubled output!

A stop-watch study might have indicated that the new method would waste time, as one tray was changed for another. There would also be avoidable steps in removing and bringing trays. But the results in output, which have been demonstrated many times, bring home the point that people, unlike machines, are goal-motivated. Each small tray presented a goal. During the work spell, each tray gave a close-range goal, or *achievement point*. When one tray was completed, a sub-goal had been reached, and there was the stimulating feeling of getting ahead on the job. The completed trays provided the workers with *achievement points* by which they could note their progress. What had been a daily grind, became more of a pursuit of *achievement points*.

Goal-motivated behavior is featured by spurts, when extra steam is turned on: I.

big backlog?

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There is an *initial spurt* each time a fresh batch is tackled. 2. *A make-up-for-lost-time spurt* after an interruption, or when one becomes aware of a slump. 3. *A finish-line spurt* when the goal comes in sight. (8, Chapters 2, 8)

Work quotas are a familiar example of goals. Sometimes these quotas are set in an arbitrary fashion, without the work group participating. The quota may be set unreasonably high, on the assumption that it will serve as an incentive to work harder. But when workers sense that their supervisors are making unreasonable demands, it has been found that the workers lower production. More blue-collar than white-collar bosses are seen as unreasonable by their workers. (7)

With assembly-line operations it is usually difficult to supply sub-goals or "achievement points" to encourage the workers in reaching their goals. (9)

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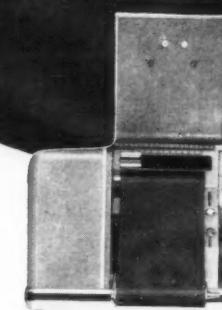
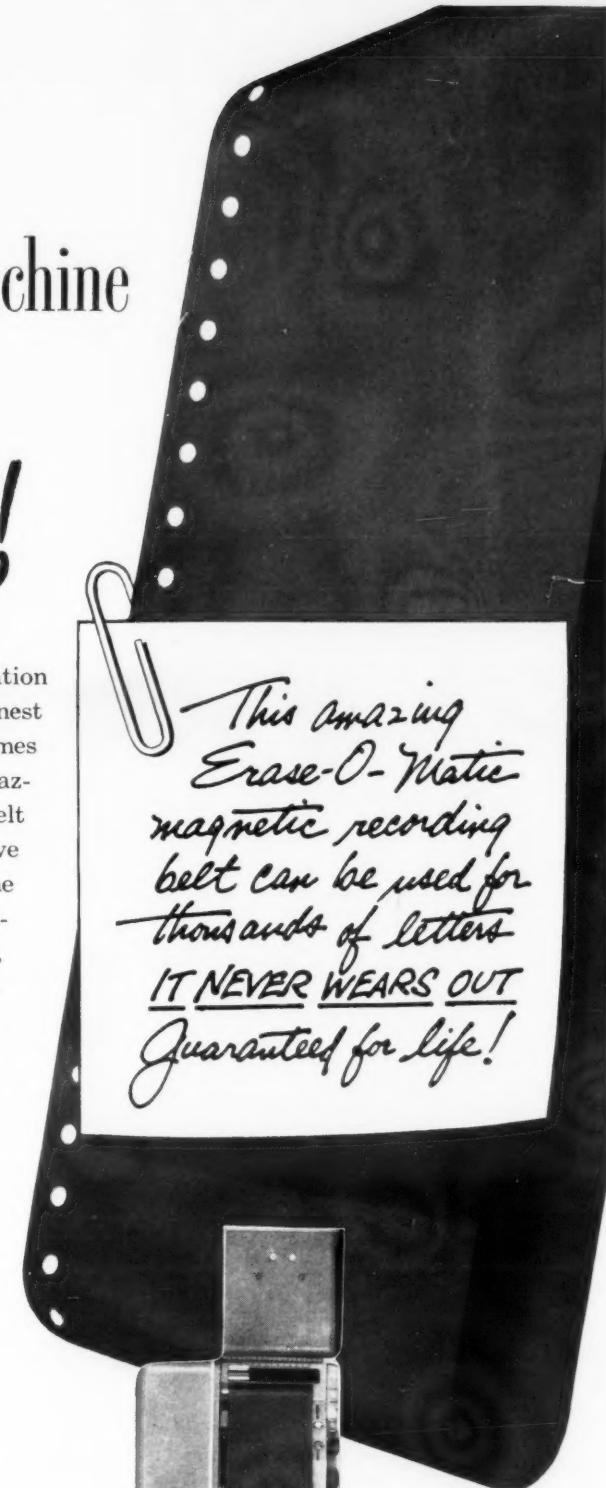


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IN THE SURVEY charted, clerks in the home office of a very large firm were divided into two classes. One class was on jobs that gave them a little variety during the day. The other class was on jobs where one hour was just like the next; all sameness and no variety, except possibly to go to the drinking fountain.

The survey showed that five times as many who were on the jobs offering variety, had high satisfaction from their work. The variety in these cases was not actually much, not nearly as much as with the one-girl office. But the little leeway that was there, produced desirable results on morale. (10)

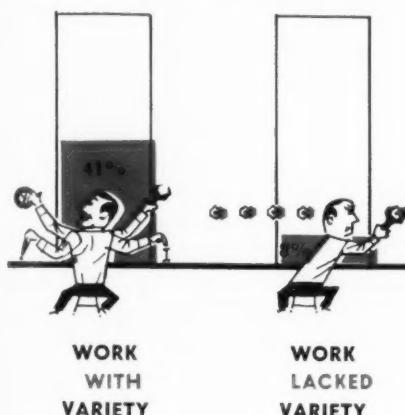
How many workers on standardized office routines are dissatisfied because their jobs lack variety? In this firm it was 23%. Another 27% felt their jobs gave them variety. The remaining 50% did not make any mention of it.

Assembly line work is usually low in variety. In a modern automobile plant, $\frac{1}{3}$ of the assembly line workers did only one operation. Another $\frac{1}{3}$ did two to five operations, such as: put four screws on a baffle, then insert nine clips—a two operation job. The remaining $\frac{1}{3}$ had jobs with five or more operations. The fewer the operations, the more men who reported the work as uninteresting. There was also more absenteeism among those men who were on jobs which had the extreme features of mass production. (9)

Some people doing a job think it gives variety, while another person at the same work thinks it lacks variety. As a rule, the less capable worker can be expected to think that a simple job provides variety. The less capable worker probably has lower goals, and the routine job reaches a goal for him, while it would not for a skilled machinist. This is one of the

in a job?

JOB SATISFACTION



things the boss needs to consider in assigning workers to jobs.

The style of boss is also a factor in whether or not a job seems to have variety. When workers are allowed to move around, talk at work, take coffee breaks, a job seems to have more variety than it might otherwise. But when a boss supervises closely, a job with actually varied tasks may seem as though it were getting nowhere. Bosses who supervise closely have been found to get less output on routine jobs. But on non-routine jobs, workers appear to accept closer supervision as a "higher" function of the leader. (11)

A little more variety can often be added to jobs that have been over-simplified. Girls assembling radios, for example, had been soldering only six connections. Increasing the number of joints each girl soldered upgraded the job because it added a little variety. (6) Work becomes more meaningful, and more goal-directed when a job has variety, but not so much that it overtaxes the individual's abilities.

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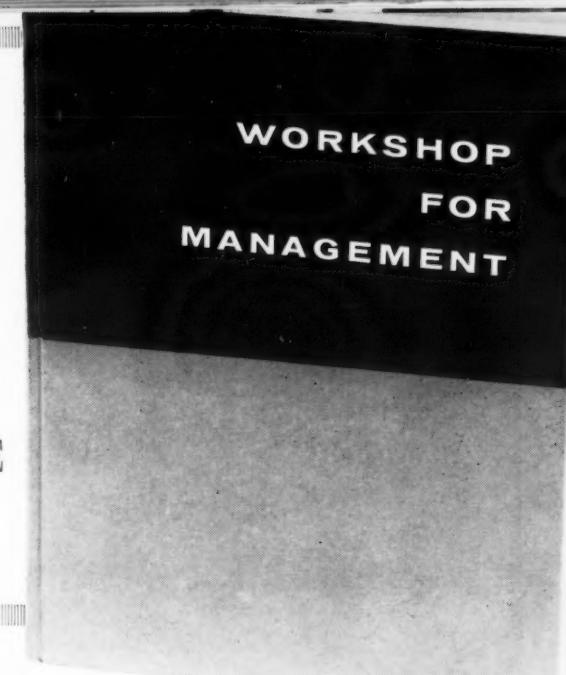
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5 What happens when the job seems important

A GOAL WHICH nearly all work groups and individual workers want to reach is to move upward by improving their job status. They are lured by the thought of winning a little more prestige. They keenly want favorable recognition not only from fellow workers, but also from the community at large. The leader who has good empathy can do many "higher" things which help his followers make headway toward this goal. (8, chapters 12, 13)

One way is to keep workers centered on the *importance* of the job they are doing. This was demonstrated in experiments for the Office of Naval Research, with people making artistic patterns with bricks.

Each of the 99 people did exactly the same work. But they were led to believe there was a difference in the status of their jobs. Some were told, "You have the best and most important job in the group." The remainder were told that the best jobs had been given to the others. (12)

Workers, who got the impression that their jobs were low class, expressed discontent about their work *three times as often* as the others during the first half-hour. Those who thought they had the low class jobs also talked more about topics that were not related to the work. This is an example of trying to avoid thinking about topics that give one anxiety.

Those on the so-called low class jobs were also more confused about how to do the work, although they turned out the same quality of work as the others. Apparently the job *seemed* harder because of the anxiety over their status. Hostility may also have been at work to help cause this confusion. There was another significant tendency in their interactions—the people on the low status jobs talked more to the people on the so-called high class jobs. Talking with the higher status workers apparently added a bit of lustre to the imagined low status work. Research for the National Institute of Mental Health, and another for the Office of Naval Research, have shown that people are inclined to talk more to those whom they think have higher prestige, probably for their own prestige feelings. (13, 14; and 15).

It was also found that grapevine rumors in one office were spread to the person

above by 65% of the people, but to those below them by only 12%. Another example of striving for prestige as a mental and social force in work life. (16)

The boss who teaches his workers new job details is also upgrading the workers' feelings of status. Among railroad laborers, the bosses who trained their men for new duties had higher productivity. (15, 17)

In the work discussed previously, about $\frac{1}{3}$ of the artistic bricklayers were women. Ideas about job status had about the same effect on them as on the men. m/m

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How to distribute



pay checks

Important values have long been claimed for the practice of having foremen distribute the pay checks in their departments. According to a survey by the Associated Industries of Cleveland (AIC), this practice is generally followed by their members.

Industrial psychologists are inclined to feel that the *actual moment* the foreman hands the factory employee his check is a very important moment to management. In those few seconds, the elements of recognition and reward, self-respect, pride, and the feeling of belonging are involved. It is a basic expression of the partnership of management and labor.

Many managements have been aware of these things for a long time, and are capitalizing on it. But for others, particularly the large corporation, pay check distribution by foremen is not always feasible.

Here are some of the typical methods of pay check distribution, according to the AIC survey:

Checks go from payroll department to foremen, who distribute them personally.

Paymaster distributes them to each workman personally.

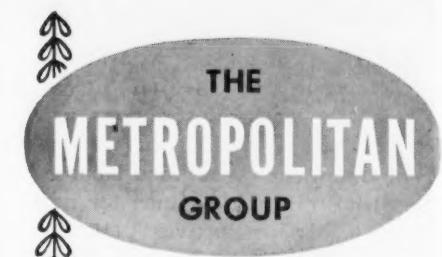
Payroll department distributes them to various timekeepers, who, from a long table in the cafeteria, distribute them to workmen just before lunch time, according to the clock number on badges.

Employees go to payroll department to receive checks.

Bank service brings cash in envelope for each employee to employee's work station, and employee submits stub from his time card in return for his pay envelope.

Payroll department mails them to the employees' homes.

Payroll department gives them to department head, who gives them to supervisors, and they distribute them to employees on their jobs.



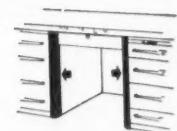
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THIS MONTH'S EXPERT



Gustave Simons

Executive Vice President
Creative Age Corporation
New York, New York

Mr. Simons is an attorney (member of the New York Bar), and economist, who has specialized for many years in the capital formation problems found in the modern corporation.

He believes that there are many advantages in the tax law, generally unrecognized, which can be utilized in developing incentives that will increase employee productivity. His ideas and findings are outlined in the eight case histories reported in this article.

Tax dollars CAN FINANCE AN Employee Trust

During recent years, changes in the Tax Law—and revisionary Tax Court rulings—have upset many a well-laid plan for effecting a tax saving. These reversals are seldom as sudden as they seem. In most cases, they follow underlying changes in tax philosophy that could be predicted by the tax-informed businessman. These trends also work in reverse, favoring the taxpayer. One such trend toward tax exemption is apparent in the government's continuing benign attitude toward Employee-Community Trusts.

The employee foundation is a non-stock, non-profit corporation. In general, they are designed to provide valuable employee incentive devices. Frequently, they do a job where pension or profit-sharing trusts provide insuperable obstacles. They are also valuable supplements to pension and profit sharing trusts.

Rather than deal in generalities, I shall detail eight fairly typical examples of Employee-Community Trusts, together with outlines of how they were financed through tax economies.

EXAMPLE 1

The machine tool industry is a business of technicians at both the employee and executive level. It is essential to the safety of the nation that groups of skilled technicians be held together through both feast and famine. One machine tool company has provided an Employee-Community Trust which can provide layoff or termination benefits for its employees or executives. Their Trust can be employed to maintain valuable personnel on a stand-by basis, who might otherwise be disbanded during a temporary economic emergency. This would be a permanent loss to both the company and the personnel, and to the nation, as well. Further, their Trust can provide for death, disability, and other personal emergencies.

A very favored procedure was used in financing this Employee-Community Trust. The annual costs of the Trust were met by donating machine tool manufacturing equipment that had a high fair market price and a low book value. The corporation received a tax deduction equivalent to the fair market value, and then leased the equipment back, deducting the rent as a business expense. The total tax benefits offset the cost of the donation.

The Trust is managed by the directors of the company. It does, on the basis of individual initiative, what the government would otherwise have to do upon a collective basis. The government has nothing to do with the Trust except to provide the tax incentives which make the Trust financially feasible, and to make certain that the Trust is used for its stated purposes.

EXAMPLE 2

An electronics company found that the maintenance of its competitive position and the continuing expansion of its operations depended upon the assembling of a group of highly-skilled scientists with the constant addition of the topmost skills available. It set up an Employee-Community Trust, financed chiefly through tax economies, which took employees already on its payroll and provided advanced education in their special skills for them.

The Trust also sent executives on field research tours throughout the country and abroad, thereby expanding their vision and their skills. Specially-gifted children of employees and executives were given scholarships for college education. Scholarship campaigns were carried on throughout the country for young scientists who were carried through college and professional schools by the Trust.

The company financed their Trust by donating several patents, receiving their tax deduction for the fair market

value of the patents, and leasing them back from the Trust. The lease then was taken as a business expense.

EXAMPLE 3

A food company desired to expand its market. A special tax-exempted Employee-Community Trust was set up which carried on prize campaigns throughout the country, providing special advanced training for women who offered the best recipes in the field in which the food company was active. This not only generated enormous amounts of good will in the market in which the company operated, but also unfolded many new uses for its products. The dynamics of the company's operation was thus expanded, and many new jobs were created.

The most common form of financing, a cash contribution, which is deductible, was used in order to provide the necessary funds.

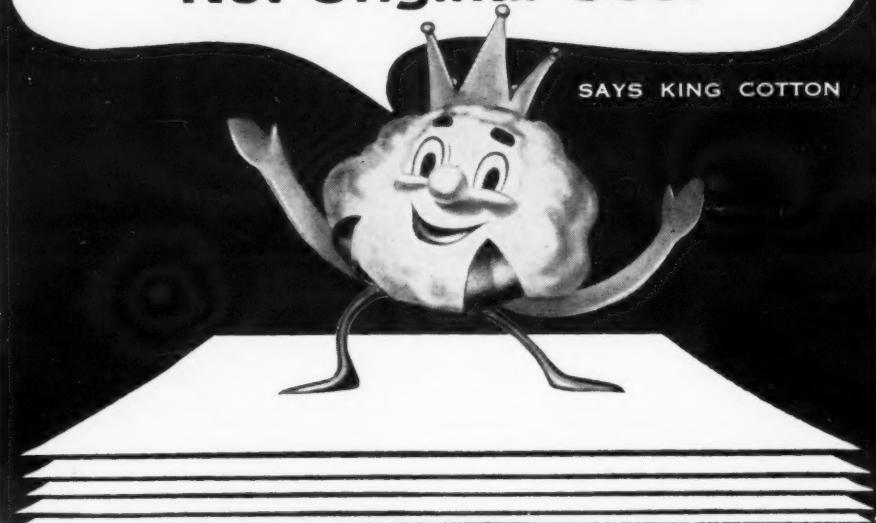
EXAMPLE 4

An engineering corporation, which manufactured highly technical products for war use, found itself with high earnings subject to heavy taxes. It was also faced with the prospect of a very substantial cutback of activity and reduction of employment on contraction of war orders. It desperately needed a new line of peacetime products.

Entirely with funds which would otherwise have been subject to practically confiscatory taxation, a research job fund (another type of Employee-Community Trust) was set up. Due to the tremendous tax burden the engineering corporation very smartly used a tax deductible cash contribution.

New products were developed, and products developed abroad were discovered and brought into the country. The company has built up a fine, solid, peacetime business, providing the means not only for maintaining the jobs already at hand, but also for mak-

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EXAMPLE 5

A container manufacturer with many plants in small towns was faced with the problem of poor community relations. Business activity was very irregular. These communities found that men and women left jobs in which they had been employed for many years, and went to work in the container plant at better wages. But then they were laid off, with the result that the average economic picture in the towns suffered badly. Furthermore, established cultural patterns in the towns were changed. Strangers crowded into the towns, causing housing shortages, and the morale of the community, of the workers, and of the plants themselves, suffered badly.

Financed primarily with tax economy, Employee-Community Trusts were set up in each of these communities. The container manufacturer had a number of warehouses that had a low book value, but a high fair market price. They donated these to their Employee-Community Trust, and leased them back from the Trust. This was supplemented by cash contributions. The corporation received deductions from the donations, the rent on the warehouses, and also received the cash contributions.

These Trusts were not intended to make jobs directly, but were intended to maintain jobs and to improve the morale with which the existing jobs were so filled. The Trust contributed to the solution of the housing dilemmas in which the communities found themselves, and provided cultural and recreational activities which fit in with the operations of the plant, and with the community as a whole. Furthermore, the reserve fund of the Trust provided standby money which carried on useful activity at reasonable pay during the slack seasons.

We are all familiar with the WPA funds of the thirties, which attempted to solve unemployment through public works. This fund operated in the same way, except that it had the enormous advantage of being locally managed by the plant managers, with the assistance of the citizens of the community.

The government felt that it would be better for the company and the community to get together and do the job jointly, without government intervention, and to do it in a preventive fashion. The government permitted the reservation of the necessary funds from what otherwise would have been tax payments. This quote from the Internal Revenue Bulletin of July 20, 1953 is an example of the support for these programs that is given by the United States Government:

"The maintenance of the good will of a community, in which a business enterprise has its establishment, is of prime importance to the enterprise because of the effect on its progress and on its income. Moreover, since the community is generally the source of labor supply, a vital consideration is the morale of the employees in their own community. These and like considerations lead to the conclusion that amounts expended by way of rehabilitation of employees for injuries and damages sustained in a major disaster have a direct bearing on the retention of the employer's good will and the morale of the employees, which, in turn, are essential to the successful conduct of the business. It is accordingly held that such amounts, expended or properly accrued, will be allowable as ordinary and necessary business expenses under section 23(a)(1)(A) of the Internal Revenue Code. See *Corning Glass Works v. Lucas*, 37 Fed. (2d) 798; *Sugarland Industries v. Commissioner*, 15 B.T.A. 1265, acquiescence, C.B. VIII-2, 50; and *Slaymaker Lock Co. v. Commissioner*, 18 T.C. 1001, acquiescence, I.R.B. 1953-14, 1."

EXAMPLE 6

A famous bank found that one of the most serious job hazards adversely affecting executive morale was the problem of the retired employee. This was particularly true in the case of retired executives whose financial needs could not be met through the ordinary form of social security and private pension plan. Worse than this, retired executives felt themselves thrown on the scrap heap. They kept returning to the company offices in a pitiful attempt to recreate a sense of usefulness. At first, the retired executive would be joyfully greeted by his former associates, but soon he became little more than a bad nuisance. The active executive, however, could not help thinking that in all too few years, he himself would be in this unhappy situa-

tion. Furthermore, management felt that this situation represented a shameful waste of valuable human assets. While these executives could not continue under the full pressure of commercial affairs, they, nevertheless, had great skills which were not ready to be cast aside.

In order to solve this all too common problem, the bank set up a retirement Employee Trust. Another method of financing was used by the bank through the contribution of appreciated securities. The bank received a deduction for the fair market value of the securities and were exempt from paying a capital gains tax. Tax economies made this much more feasible than the ordinary retirement program.

As executives approached retirement age, they would start working for the trust. Some of the executives did research work, others did educational work, and still others administrative work. Detailed studies of the capacities of the executives were made, and the best kind of work for them was developed. At age sixty, the executive went to work for the Trust one day a week, and continued at the bank four days a week. At sixty-two, he worked with the Trust two days a week, and continued at the bank three days a week. At sixty-five, he quit the bank and its heavy pressure, and devoted himself on a four-day-a-week basis to work for the Trust along the lines of his specialized skills.

Then, as he grew older, he gradually cut down on his Trust activity, be it research, education, or the like. *Unlike a pension fund, management was not governed by mathematical formulae.* The management of the Trust, which consisted of directors of the bank and special advisors, decided what executives and employees most needed the financial and emotional stimulus available through the Trust. Thus, variations in stipend paid by the Trust could be determined in each individual case within the discretion of the Trust managers, providing that the simplest principles of honesty and good faith were observed.

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economic research is carried on by the research members of the Trust, and the relations between the community and the banking world are constantly under study by other Trust members.

EXAMPLE 7

A large retail chain organization found that its earnings were slipping badly because of the poor job morale of its employees. A study disclosed that one additional successful sales transaction each morning and each afternoon would represent the marginal volume, which would increase their earnings by some 50%.

The company set up a tax-free Employee Trust managed by some of its directors. It then went to the employees and said, "When we have earned 8% of our capital, we will take a predetermined portion of any extra earnings and put them into this Employee Trust. With the Trust, we will buy stock of the company on the open market, and hold it for your benefit. Alternatively, we will buy newly-authorized stock of the company. When you leave the employ of the company after a period of years, retire, die, or are disabled or unemployed, you or your family will obtain the benefit of these shares, or the dividends they earn over a period of years, thus you are being provided with an incentive-security fund."

A ten-year analysis demonstrated that some \$14,000,000 of additional capital would thus be created for the benefit of the employees directly, and indirectly for the benefit of the corporation and its stockholders. Back of all this, the government would benefit because of the increased level of business operations, for it was found that the program acted as an incentive for that higher level of productivity which was essential for the growth of the company. Not only were jobs made and maintained, and job morale improved in all the stores of the company, but jobs were made on the part of the manufacturers throughout the country who supplied the company and its stores with the goods. In addition, the stock acquired through this Trust, instead of being in the hands of absentee-management, was managed by a group of trustees drawn from the board of directors of the company. (next page)

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methods

EXAMPLE 8

A textile company desired to install a retirement plan for its mill hands. Actuarial studies indicated that the cost of respectable retirement benefits would be beyond the means of this company, because of the huge number of employees involved, particularly in the many years of low earnings that afflict this industry. As a solution for its problem, the company installed an Employee Trust to improve the morale and the work productivity of all of its employees.

The provisions of the Trust stipulated that *the cost of labor as a proportion of value added to the raw materials by production would be measured by management engineers. Any subsequent reduction of this proportionate cost of labor would be shared three ways: one-third would go to the customers of the company in the form of reduction in prices; one-third to the stockholders as their reward for providing the equipment and capital; one-third to the employees' retirement fund.* Provision was also made for cash distribution out of the job fund, where job conditions justified this at the discretion of the trustees, acting in this case with the guidance of an administrative committee.

The Trust was tax-exempt, with the result that the accumulation of retirement benefits was approximately twice as great as it would otherwise have been. Some of the funds were invested in the plant of the company, with the approval of the Commissioner of Internal Revenue. The plant was rented to the company with a base rental plus a percentage rental, depending on production. The employees thus had two incentives for productivity. First, as productivity increased and relative labor costs decreased, the benefits were earmarked on the basis described before, thus making possible a retirement plan where none had been deemed possible in the industry before. Secondly, since the income of the Trust and the level of benefits depended on the volume of production, at least in part, there was every incentive to step up production and to avoid work stoppages in the company.

(next page, please)



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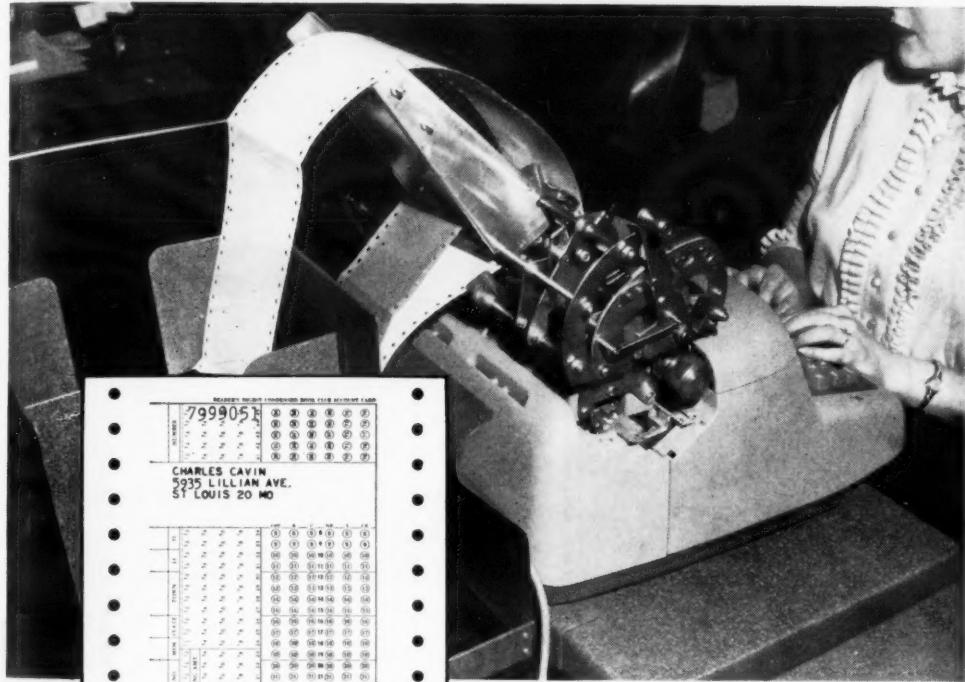
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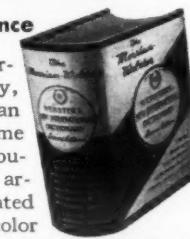
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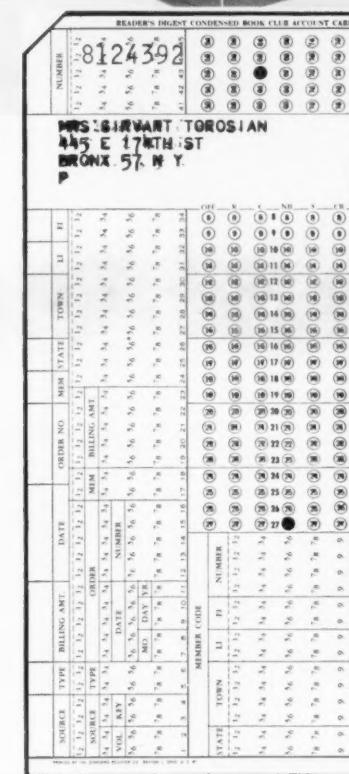
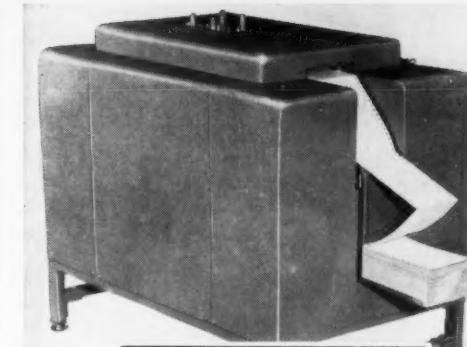
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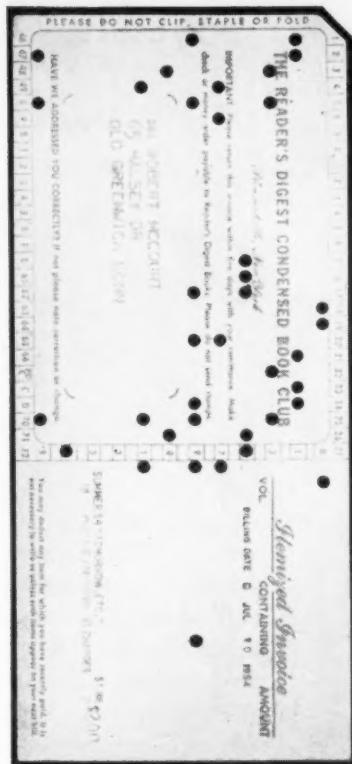
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All payments are classified as either "straight" or "miscellaneous." Straight payments are those which are returned with the punched invoice cards, and are posted mechanically. These are run through a collating machine. Otherwise, the account clerks punch the payment into the account card as a credit. The hand-punch is pin-pointed to its proper location through the guide holes punched in the die-cutting operation.

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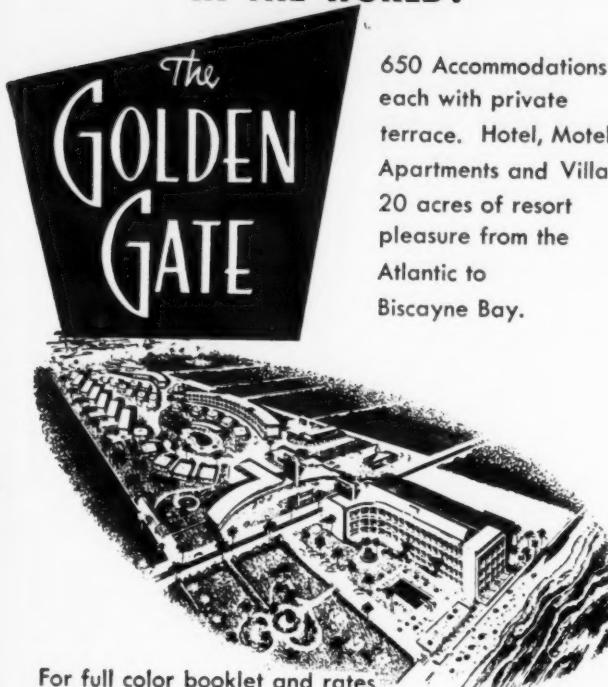
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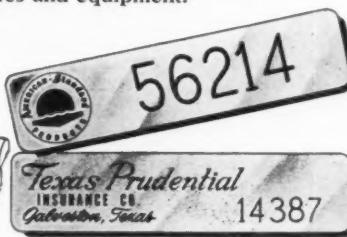
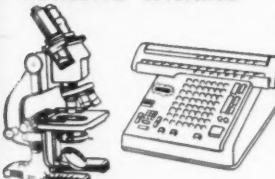
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WHAT MANAGEMENT SHOULD KNOW ABOUT

Industrial Health Programs

One of the deeply satisfying things about work in the industrial health field is that we are "on the side of the angels," and find it "good business" to be there. Our problems usually stem from lack of financial support, but not from lack of moral support. Management may have once looked upon each employee as simply a pair of hands or a strong back. But today, in our country, at least, I do not question management's desire to maintain the health of each employee. I do wonder, however, how we can show management that it can do what it wants to do in this field, while still acting in the balanced best interest of the owners of the business.

Management wants and must get a satisfactory return on the investment it makes in industrial health. It is simple to say, but the return on this investment is usually so elusive and intangible that few have been successful in measuring it. Most have been forced to be content with assumed returns in the forms of reduced absenteeism, lessened turnover, or better employee attitude with resultant higher productivity. These are easily said, but hard to prove when trying to justify an increase, or perhaps even the continuance of certain industrial health programs.

What are the yardsticks?

So the first objective of a modern industrial health program, and perhaps the most difficult of attainment, is the setting up of yardsticks by which the effectiveness of effort in this field can be measured. Absenteeism, for example, is often used as one of the yardsticks for measuring the effectiveness

Can industrial medi-
cine pay for itself?

Why the small firm has
a different problem

The industrial doctor
vs. the private
practitioner

of the industrial health program. Yet this yardstick is subject to so many other influences that its validity is highly questionable. Some factors that improve a plant's absenteeism are:

Good weather:

Absenteeism is normally lowest during the second and third quarters of each year.

Male, rather than female, em- ployees:

Men are usually absent about two-thirds as much as women.

Economic depression:

Absenteeism hit a twenty-five year low during the great depression.

Good employee relations:

Absenteeism is lowest when employees like their work, like their boss, and are accepted in their work groups.

Each of these factors can cause a swing of 30% or more in absenteeism, and all are outside the control of the plant doctor. So, absenteeism, from management's standpoint, leaves much to be desired as any sort of measure of performance.

Employee turnover, Workmen's

Compensation costs, and employee morale have similar drawbacks when used as yardsticks to evaluate industrial health effort. The best I can do is to indicate the direction in which I am hoping to find a yardstick. It is in the field of employee effort.

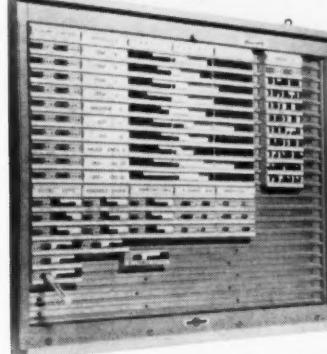
The best area to explore

Let us assume, for example, that an industry is paying its employees an average of \$4000 a year, and spending an average of \$20 a year for maintaining the health of each employee. The industry's management is interested in the well-being of its employees but also has the responsibility of spending the owner's money in the over-all interest of the owner. Management does not know whether it is now extravagant in spending \$20 per year on each employee, or whether it could wisely spend two, three, or five times that amount. The yardstick I am seeking will be related to the employee's earnings and effort. Here is what might be considered.

It seems likely that most employees (and that includes many of us) do not work at top effort, or top efficiency, except in spurts. Time is wasted gossiping with other employees, in extra minutes in the washroom, and in just plain dawdling at the job. Effort is wasted in doing things inefficiently for lack of knowing the best way, or effort may be wasted deliberately.

Many employees have poor vision and do not see as well as they might if fitted with proper glasses, or may not work as hard as they might if they had better health, or have as good an attitude as they might if working conditions were better. Result? Well, it is

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probably safe to guess that if we could correct all of these things, the worker productivity might go up twenty or thirty percent, or more.

What has this to do with medical yardsticks? Just this: *Except for a man's own supervisor, it is likely that the industrial nurse or doctor will see and talk to each employee more often than anyone else representing the company to the employee.* In most plants each employee will see the nurse an average of once a month. If, as a result of these visits, *the employee is encouraged to believe that his management is sincerely interested in his well-being*, isn't it likely that he will put forth a little greater effort and a little greater care for the company?

A little greater effort on the part of each employee will more than repay the cost of the most progressive of our employee health maintenance programs. For example, an annual health check-up for each employee could normally be done for a cost in the order of \$25 for each person examined. If the employee's response to this check-up was to put forth five percent more effort he would be returning about \$200 for the \$25 investment! Only *one percent more effort* would return \$40—more than enough to repay the cost with margin to spare.

So the yardstick I hope to find will be related to productivity. And, let me say here, that I do not approve the "shooting at the moon" technique whereby we seek to expand our function limited only by the funds we can get. I think we must set limits to our own expansion that are consistent with the over-all objectives of the business of which we are a part.

The object of industrial medicine

This brings me to the second objective which I would say is for *each industrial medical unit to establish its own goals consistent with the over-all objectives of the business of which it is a part*. There is no reason to assume that the objectives of a modern industrial health program should be the same for every business. Of course, we can accept objectives like:

- ... to keep employees at work
- ... to make them willing, eager if

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possible, to give their skill, care, and effort to their jobs . . . to avoid rather than cure industrial disease or accident . . . to render first aid

But are we very understanding of the problems of industry when we dogmatically say that an approved industrial health program shall include complete preplacement and periodic health examinations by a doctor, adequate facilities under the charge of a doctor, employee health education, adequate health records, etc. That type of program fits to a "T" our large established industrial plants. In fact, in the case of my own company, General Electric, we recently opened a new industrial health clinic at our Schenectady Works that has cost us over a million dollars.

Would such a program, though, be feasible for a business temporary in nature like some logging operations; or seasonal like some harvesting and canning operations; or fit a new business desperately short of capital? I would think not. In fact, I suspect that one of the reasons why industrial medicine is lagging in small businesses (and that means over 90% of all businesses) is the fact that we set the target so high that they do not even try to reach it. How much better it would be if each business were encouraged to set its industrial health programs on a basis consistent with the firm's other objectives.

During the past two years I have visited and inspected, as part of my job, the industrial health facility in each of over a hundred different plants within and outside of my own company, and both in America and abroad. These plants have ranged in size from one employing 24 persons to one having over 30,000 employees. In each of these widely different plants there has been a similarity of management's interest in the well-being of its employees, but great differences in their ability to provide better job environments or improved health maintenance programs. So it has seemed to me that rather than set an identical target for each plant that it would be wiser to set individual goals that had a chance of being reasonably attained and at a later time new goals might be set.

Industrial vs. private practice

The third objective, and I mention it with some hesitation, is to develop and follow a set of ethics consistent with our objectives. The medical profession has many critics today and most of the criticism falls in the field of ethics. They include disapproval of a scale of fees varied to income, fee splitting, and one doctor's reluctance openly to criticize another. These are not aimed primarily at the industrial doctor, but he is not free of ethical problems. For example, the medical profession has tended to disapprove the paying of salaries to physicians and to encourage the charging of fees for services rendered. Sounds reasonable, doesn't it? But let's see how it works when we hire a part-time doctor for one of our small plants.

I shall refer to an actual case of a plant I visited this year which was suffering from extensive and expensive employee turnover. This plant has 500 employees, mostly girls. Some of the girls work a few months and then get married; others work awhile, then leave for better jobs. The result is a labor turnover of about 100%. That means that the plant must hire about 500 new employees during the year in order to maintain its employment at 500 throughout the year. It sounds incredibly high, but it is an actual fact.

Now each of these new employees must be taught her new job, must be added to the payroll, and made a part of the employee insurance and benefit plans. It is estimated that it costs nearly \$300 to add a new employee and bring her up to normal productivity. Therefore, the high turnover is costing this plant about \$150,000 a year.

What has this to do with the doctor? Well he gets \$5 for each preplacement examination he performs. The higher the plant turnover the more money he gets. Likewise, he gets paid on a fee basis for each industrial injury at the plant. The more injuries at the plant the more fees he gets. Moreover, there is no fee nor inducement to the doctor to go in the plant, look for job hazards, and try to lessen accidents and reduce turnover. It is actually the other way. *The doctor's compensation goes up in proportion to the plant's*

roubles. Other members of management expect to be paid in proportion to the plant's successes rather than its failures. Then why not have the doctor paid on a basis where the better industrial health he brings a business, the higher his earnings? In other words, pay him better for his ounce of prevention than for his pound of cure.

From management's standpoint it would make more sense to pay him a salary (a good one, too) to keep well employees well, to protect these employees by carefully watching their job environment, and to call attention to things that might cause accidents.

When management decides to put its *part-time* doctor on a retainer basis, instead of a fee-per-visit basis, it might consider giving the doctor "employee status." In the case of companies with advanced employee benefit plans, this arrangement provides special benefits not otherwise obtainable. From the doctor's standpoint, the retainer fee, or salary, provides a dependable source of income, but more important to him may be the opportunity to take part in the employee pension plan, special stock purchase or savings plan open only to employees, and low-cost group life insurance plans.

Give the doctor employee status

From management's standpoint, giving the part-time doctor employee status has advantages too. It will often provide enough added inducement to attract a higher caliber doctor than the salary alone would attract. It tends to make easier the acceptance of the doctor as a part of management. And it encourages the doctor to provide the management, of which he is now a part, with an industrial medical program fitted to the needs of the plant. By giving the doctor employee status the company can insist that the doctor keep up-to-date in his field, and can direct him to participate, at company expense, in meetings, clinics, or post-graduate courses that assure his increasing his professional competence.

A second area in the field of ethics has to do with outside practice and this, I am afraid, is a vicious circle. Many industrial physicians, at what are considered full-time jobs, are paid so little that they feel forced to develop

outside practices. *These outside practices take time and interest away from their industrial jobs.* Result: they are not worth more than they are paid. The correction might be raising their salaries with the provision that they drop the outside practice.

Then there is the matter of the relationship with the community doctors—a delicate one for the industrial doctor. If he expands his in-plant service, the private practitioner feels he is being discriminated against. If he keeps the in-plant service limited to industrial illness or injury, many employees will be sore at management for failing to let them have simple medical attention for personal ills. Solution? Probably it lies in the doctor adhering to the principle that all non-industrial patients will be referred to their own physicians if the matter is serious, or if it seems likely that one or more revisits will be necessary. This does not exclude the many simple administrations like easing a headache, or dressing a simple injury, but does exclude the type of personal injury or illness that could be major or is likely to be prolonged. Examples might be the care of a severe sprain, setting a broken bone, or treating a persistent, non-occupational dermatitis.

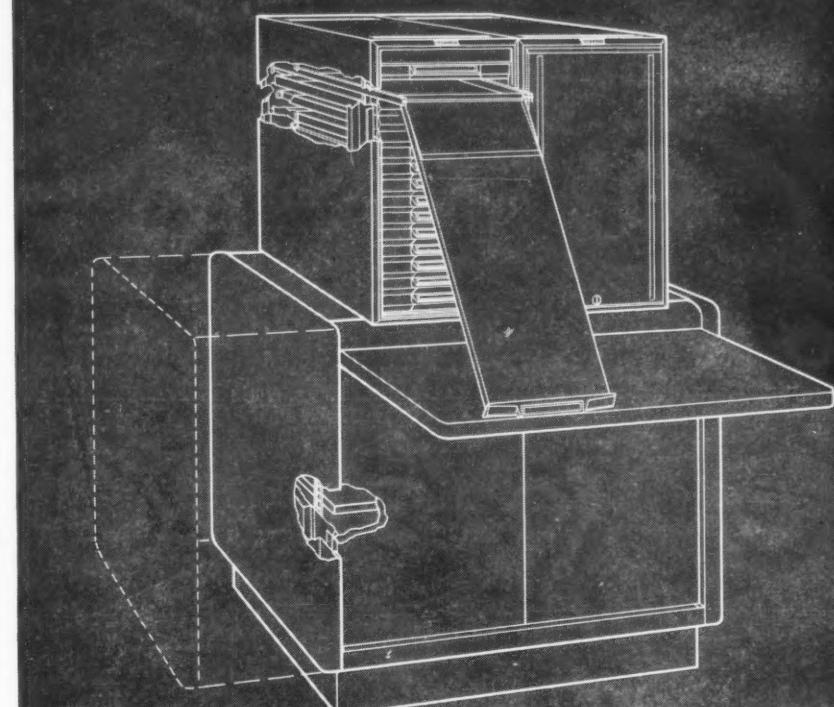
However, it should be remembered that the industrial doctor and nurse have a responsibility not only to keep well employees well and able to work, but to help create in them an attitude of willingness, even an eagerness, if possible, to work. This requires time on the doctor's part to counsel with employees on those personal problems that interfere with the work of the employee. The doctor can render a particularly valuable service in areas like alcoholism, whether advising the employee about himself or about a member of his family.

It is worth mentioning at this point that there seems to be a growing realization on the part of community doctors that good industrial medical programs assist them rather than compete with them. They aid them by uncovering disabilities that call for treatment by the employees' own doctors—cases that otherwise might have gone unnoticed until too late for treatment.

These are just instances, or details.

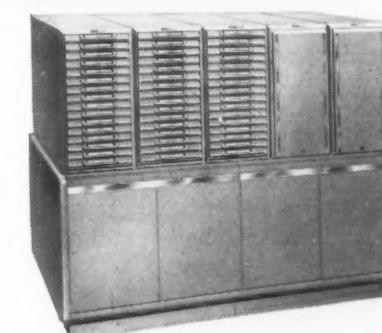
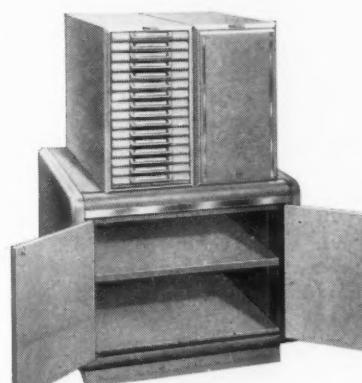
(next page, please)

ACME VISIBLE VIRGINIAN LINE CABINETS



IN THE NEW ACME GREYTAN

world's fastest visible



Completely new . . . completely different . . . designed for easier, speedier reference and posting, made to precision specifications, engineered for maximum strength, finished a new light, warm color . . . a new high of efficiency and beauty in visible equipment.

NEW COLOR—Greytan . . . a light warm color, pleasingly harmonious with modern office machines and furnishings.

NEW APPEARANCE—characterized by crisp, prismatic, functional lines.

GREATER STRENGTH—maximum rigidity achieved by formation of shell and reinforcing members.

GREATER CONVENIENCE—with more capacity, wider label holders slanted for visibility, more finger space.

EASIER TO USE—intermeshed slides forming partitions between trays, nylon rollers and rubber stops reduce friction, provide smooth, speedy, quiet action.

**ONLY THE RECORDS THAT ARE
USED PROFIT A BUSINESS**

ACME VISIBLE

**Acme Visible Records, Inc.
CROZET, VIRGINIA
Representatives in all principal cities**

(Circle 251 for more information)

"With ads like this in the POST..."



Throughout the year, advertisements in the Saturday Evening Post will bring the story of Linen Supply Service to millions! Your employees will see and read these ads . . . become aware of this fine service used by better offices and establishments everywhere. They'll better understand why you provide this service for them . . . and their

appreciation will be shown in better employee relations, higher morale, increased efficiency.

Be sure you are aware of all the advantages and services your local linen supplier has to offer. Call him now for all your washable cotton needs. Look under LINEN SUPPLY or TOWEL SERVICE in your classified directory!

In any business . . . Linen Supply is Good Business

(Circle 285 for more information)

"Let me tell you about
my operation!"



You've seen those fluffy-soft cotton towels they use at beauty shops . . . the sparkling-clean cotton table linens you find at better restaurants . . . and the crisp, attractive cotton uniforms and coats the salespeople wear in drug and grocery stores? Well . . . that's my operation . . . linen supply service! And those are only a few of the many, many different kinds of washable cotton articles we pro-

Linen Supply
ASSOCIATION OF AMERICA
and National Cotton Council
22 W. MONROE ST., CHICAGO 3, ILL.

In any business...Linen Supply is good business.



Linen Supply
ASSOCIATION OF AMERICA
and National Cotton Council

22 W. MONROE ST., CHICAGO 3, ILL.

The important thing is that the industrial medical profession has to develop and practice a code of ethics in every phase of its work. And it must develop this code to fit its own needs which may differ from those of the private practitioner.

The three objectives I think most important for industrial medicine are:

1. Diligently seek a set of yardsticks to measure value of their work.

2. Participate with management in establishing industrial medical services tailored to the broader objectives of the business of which it is a part.

3. Reach towards the development and practice of a set of industrial medical ethics that will bring the lasting admiration of all the people for the deserving work being done in this field.

Attainment of these objectives will help get management's financial support for the expansion needed in the field of industrial health, will help attract talented young men to this field, and will make it more likely that worthy contributors in this field will be recognized for their efforts. m/m

This article was adapted from a speech presented at the Pacific Northwest Industrial Health Conference.

"worth

Cost of absenteeism: Absenteeism resulting from sickness and accidents cost American business an estimated \$9,000,000,000 a year, or about \$1,275 every second, according to the Small Business Administration. This cost to business comes from an estimated 400-500 million man-days lost every year from temporary disability due to industrial and non-industrial sickness and accidents. A new booklet, *Health Maintenance for Greater Efficiency*, lists four factors that every small business owner should recognize:

1. Efficiency of employees is dependent upon proper selection, utilization, and maintenance—just as efficiency of machinery and equipment.

2. Recognition of the importance of health by management and the provision of health services builds incentive in desirable workers.

3. Reduction of labor turnover, and sickness absenteeism will give the employer greater control over production and sales.

4. Elimination of potential hazards cuts Workmen's Compensation costs.

repeating"

methods

thought starters

Thought Starters deal with a "practical solution to a management problem." The Editor invites contributions—which are paid for at our normal space rates.

TABULATING



Defective punched cards are "ironed out" by new machine

The increasing use of punched card checks has raised the problem of handling those that become damaged. The Continental Illinois National Bank and Trust Company experienced a slowdown of operations due to mutilated cards jamming the sorting and collating machines.

In addition to the volume of punched card checks issued by its customers, the bank also uses them for accounts payable disbursements, payroll, and dividend checks. Approximately 8,000,000 punched cards are processed by the bank per year. Defective cards ran as high as 6 per cent. Many of the cards were sent in wrinkled and creased, or stapled together. As a result, the collating equipment would jam and the bank had to resort to hours of hand sorting, filing, etc.

The bank's resident engineer developed a device based on a magnetic principle which separated the stapled cards. This, however, solved only part of the problem. After a year of research and study, a machine was developed for the company, which "reconditions" the mutilated cards.

First, the cards are put through an over-all knurling process, which serves as a substitute for dampening. Then they go under a series of pressure rollers to iron out all the wrinkles and creases. A rejection mechanism eliminates cards with pins or other fasten-



march 1955

ers. An electronic "memory" device takes impulses from the sensing mechanism and channels each card to its proper bin. An automatic switch turns off the machine when the stacking hopper is empty or gets too full. The defective cards were reduced to 1%.

For more information, circle number 396 on the Reader Service Card.

METHODS



Vinyl plastic job ticket holders save costly replacements



A. T. Wilson
Supervisor, Stationery Stores
AiResearch Manufacturing Co.
Los Angeles, California

Our Production Control Department usually has about 42,000 shop "travelers" in the system at all times. Until recently, they were using a 10" x 12½" cellulose acetate envelope as a job ticket holder to route orders throughout the plant and company-owned machine shops on the outside. Since the envelopes are exposed to rough handling, acids, grease, moisture, sun, etc., they soon became brittle and cracked, resulting in a replacement after one or two trips through the plant. Actually, we were using 2,500 envelopes per month or 30,000 per year at a cost of 34c each, which amounted to a yearly cost of over \$10,000.

Through a suggestion turned in by one of our employees, we were informed that job ticket holders made of vinyl plastic were non-brittle and resistant to tears, scratches, and wrinkles. Though impervious to sun, moisture, and most acids, they are still highly transparent. Further, due to an electronic sealing process, all edge stitching was eliminated, greatly increasing life.

We placed a trial order and subjected the plastic envelope to a thorough and exacting test. The results were highly satisfactory, and the vinyl plastic envelopes measured up to all expectations. We found that they lasted about six times longer than the

Machine that
loves to fold...
faster...
better...
cheaper!



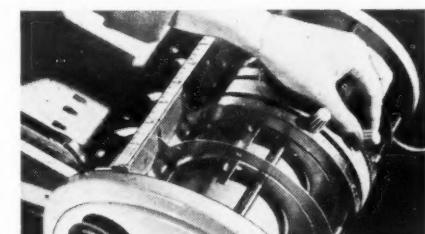
The FH costs less than a standard typewriter

Isn't it wasteful and inefficient to make skilled office workers take time out from more important work to fold sales letters, bulletins, announcements, invoices and like items that have to be folded for mailing?

A Pitney-Bowes model FH can do all such folding jobs for you at much less expense.

The FH can make two folds at once; can double-fold 8½ x 11 sheets at speeds up to 5000 per hour; can make eight different folds in sheets from 3 x 3 to 8½ x 14 inches of different paper weights; can even fold sheets stapled together.

With semi-automatic feed and electrically driven, the FH is fast, accurate and easy to operate. It takes but a few seconds to ready it for a job; simply move two knobs to adjust for the desired folds...easy as tuning your TV.



Move indicator knobs to widths wanted . . . And it's ready to go!



Fully automatic model FM folds up to 19,000 sheets per hour.

PITNEY-BOWES Folding Machines



Made by Pitney-Bowes, Inc., . . . originators of the postage meter . . . 93 branch offices, with service in 199 cities in U.S. and Canada.

(Circle 301 for more information)

PITNEY-BOWES, INC.
4547 Pacific St., Stamford, Conn.
Send free booklet on Folding Machine to:

Name _____

Firm _____

Address _____

Webster makes ribbons for 225 office machines

Machines vary. So do operators. And job requirements vary, too. But two needs are constant — the need for clear legible work and the need for economical production.

Webster meets these needs with a wide variety of inked ribbons for specific machines and specific kinds of work. They are made from the finest materials, either silk, long staple cotton or nylon. And there is a wide choice available in color and ink intensity.

Naturally, these fine ribbons are unconditionally guaranteed. Webster introduced the first non-filling typewriter ribbon in 1889. Since then they've been precision made and carefully inspected, inch after inch, to insure uniformly good service.

The ribbon that does high quality work, dependably and economically, is the best ribbon for your office. Your wisest choice is Webster's . . . consult your nearest dealer or write to —

F. S. WEBSTER COMPANY

10 Amherst Street
Cambridge 42, Massachusetts

(Circle 316 for more information)

acetate envelopes. Since they cost only 25c each, we are saving 9c each in the initial cost, plus an annual replacement savings of from \$5,000 to \$7,000.

QUALITY



Internal "advertising" improves precision quality control

An excellent way of drastically reducing rejects was discovered by Harold Wrigley, Works Manager of the Barry Corporation of Watertown, Massachusetts. Much of the company's work is done to exacting specifications and, therefore, a low rejection rate is very important. The placing of a pair of signs, one over each main aisle of the plant, reduced the rejection rate 50% on all products within a six-month period. The signs carried two messages: one in large letters reads REJECTS CAUSE UNEMPLOYMENT, and the other in small letters reads BE CAREFUL—A QUALITY PRODUCT TODAY MEANS SECURITY FOR TOMORROW. The company reports that the factory personnel welcomed the signs as a constant reminder that high quality work was expected of them.



tion of a pre-determined time cycle, which in the case of Lag Drug Company is 1 minute and 50 seconds, the recorded phonograph disc interrupts with a goodbye message. An indicator automatically shows how many calls have been received, so that there is no chance of missing any orders.

The company has found the device to be of such money-saving and time-saving potential, that they have installed their second piece of equipment, with plans to increase the installation as required.

For more information, circle number 376 on the Reader Service Card.

SALES



"Automatic secretary" takes orders when offices are closed

The prohibitive expense of maintaining 24-hour telephone order service every day has been eliminated by the installation of an electronic telephone recording device at the Lag Drug Company in Chicago. This wholesale drug supplier now receives orders automatically on nights and weekends, and rushes them out the following day.

The recorder consists of two sections; the first piece of equipment has a cradle on which the telephone receiver rests. When a call comes in, an arm lifts the receiver off the hook. This, in turn, activates a revolving disc on the second piece of equipment. A pre-recorded opening message identifies the firm, and requests the caller to leave his order, which will be recorded. At the termina-

METHODS



Disciplinary demerit system cuts workers' absenteeism

Since the adoption of a demerit and disciplinary program six months ago at its Hicksville plant, the Pittsburgh Plate Glass Company has reduced its absentee-tardiness problem.

Demerits are issued whenever an employee is absent or late. If a worker fails to report his absence in advance, he is charged with four demerits. If he does report it in advance and according to instructions, he receives only one demerit. If his absence is proven unavoidable, no demerit is given. When a worker is late, he receives $\frac{1}{4}$ demerit.

An employee receives a verbal warning for two demerits during any six-month period, and a written warning for six demerits. There is a three-day suspension for eight demerits, a five-day suspension for 12 demerits, and a "suspension with intent to discharge" for 16.

The company has found its employ-

ees cooperative; much of this is credited to the foremen. It is their job to talk to the workers, explaining how absenteeism and lateness upset production and shipping schedules, and raise costs. When the foreman receives a notice from the personnel office, he speaks to the worker involved about his demerits and explains the penalties, emphasizing how important his presence is to the smooth operation of the department. Absenteeism has dropped impressively as a result of the plan.

MORALE

thought starter

Reporter form helps create inexpensive house organ

Two simple outline forms, used at Rose Marie Reid, a swimsuit manufacturing firm in Los Angeles, helped turn a sporadic, one-page, mimeographed sheet containing routine management announcements into a bi-weekly company newspaper.

The gathering of news by inexperienced reporters is usually the deterrent to putting out a regular company publication. The forms greatly simplify reporting by defining the pertinent questions to be asked of a news source in obtaining a story or a personnel interview. One form is used exclusively for a story or "action," while the other more detailed form will result in a thorough personnel interview. The following is a question outline which guides the reporter in an interview:

Reporter's Interview Questions

1. Personnel Background

- a. How did you get into this type of work?
- b. How long with the company?
- c. Past experiences in similar business.
- d. Education which prepared you for present position.
- e. Family status—number of children, grandchildren, etc.

2. Relation to Rose Marie Reid

- a. Nature of job, duties, responsibilities.
- b. Future plans for your department.
- c. How these plans affect employees.
- d. How current problems are being solved—sales increased, safety measures taken, etc.
- e. Progress made in your department since you came.
- f. Little known facts about your work which would interest employees.

3. Miscellaneous

- a. Hobbies or outside activities (lodge work, charities, personnel projects).
- b. Your daily philosophy as it might be applied by employees.
- c. Anecdotal material (incidents or stories you think worthwhile to pass on).

Employees, designated from each department, make up the company "re-

An 'employee' not on the payroll cut order-processing time 60%

WHEN A BUSINESS OUTGROWS ITS SYSTEM, AN EXPERIENCED OUTSIDE VIEWPOINT IS OFTEN A BIG HELP, AS IN THE CASE OF THE MOORE MAN WHO STARRED HERE LIKE AN 'EMPLOYEE' NOT ON THE PAYROLL.



ahead of the staff's ability to process them. Paper work took longer than it should. A single order needed too many writings and, in the aggregate, too many man-hours. The trouble in the system made itself felt in operations like inventory control and slow billing. And then...

THE CASE OF THE SLUGGISH SYSTEM—An old-established company, a leading maker of pencils, prides itself on quality not only in manufacturing but in office method. The demand for its merchandise has increased persistently and finally got so heavy that orders raced

Underscoring Efficiency

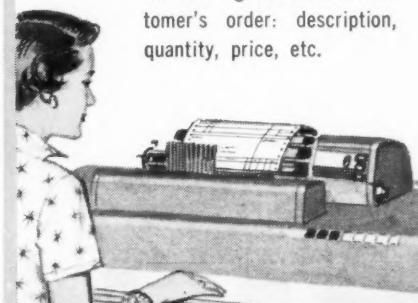
with a 6-part
Moore
FACTORY ORDER
featuring

- Spot carbon tissue
- Carbon opaques
- Spot hecto carbon, etc.



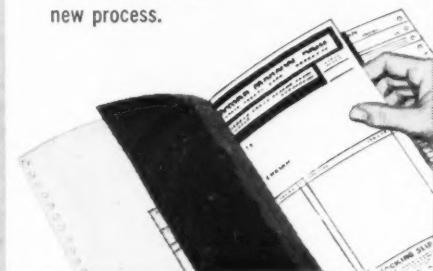
Part 1 is the Factory Order

It's filled out in an accounting machine that prints from punched cards containing details of customer's order: description, quantity, price, etc.



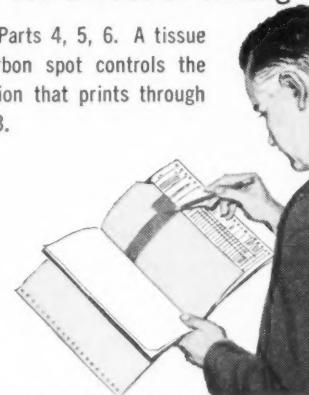
Part 2 is the Label

Also packing slip. It's a hecto master and Shipping uses it on a Spirit Duplicator to run off all the labels that are needed. A fast new process.



There are 3 Bills of Lading

They're Parts 4, 5, 6. A tissue with carbon spot controls the information that prints through to Part 3.



Carbon Spot does the same

It appears on the back of Parts 3 and 4.



The Shipment is invoiced

on a separate 4-part Moore form. Customer gets his copy together with Bill of Lading from the 6-part form. This makes the system dovetail.



Savings and gains: A way to produce speedily all the labels an order needs is one important benefit from the system. *Others are:* 1 writing does the job of 3. Elapsed time from order to shipment has been cut from 20 to 8 hours, a 60% gain. Streamlining saves 400 clerical man-hours a week. So many improvements have been built in (Circle 327 for more information)

that it proves the wisdom of getting experienced help. The Moore man can be called in to look over *your* problem any time you think he might help. Meanwhile, ask for samples of system improvement in your field. Write: Moore Business Forms, Niagara Falls, N.Y., Denton, Tex. or Emeryville, Calif.





Sound can be subtracted—safely...

Fire-safe Fiberglas Ceilings absorb up to 80% of noise!

Noise in your office means lowered morale . . . decreased production. But *quiet*, brought about by an acoustical ceiling, made of Fiberglas* Sound Control Products, will improve morale . . . boost production and efficiency to new high levels . . . reduce labor turnover.

Fire-safety with beauty! Not only are Fiberglas Acoustical Ceilings the most efficient on the market, but they are rated



Beautiful, too! Here's a plastic-faced, washable Fiberglas Sonofaced* Acoustical Ceiling, one of many types suitable for office use.

(Circle 294 for more information)

incombustible by the Acoustical Materials Association and bear the Underwriters' Laboratories label. They easily meet the strictest safety codes.

Permanent! There's no sagging, buckling, shrinking or rotting to mar the beauty of your Fiberglas ceiling.

And so low in cost! The lowest in cost, in fact, of any fire-safe ceiling on the market! Priced and styled for any location from private office to general space. Easy to maintain, too.

Send for free booklet—"The Ceiling that Cuts Overhead"—and see how Fiberglas Acoustical Tile Ceilings can make your noisiest office pleasantly quiet and efficient. Write today for your copy: Owens-Corning Fiberglas Corporation, Dept. 174-C, Toledo 1, Ohio.

*Fiberglas, Sonofaced (Reg. U. S. Pat. Off.) Stria and Noise-Stop are trade-marks of Owens-Corning Fiberglas Corporation.



SOUND CONTROL PRODUCTS

- Textured, Perforated, Sonofaced*, Stria* Acoustical Tile
- Textured, Sonofaced Ceiling Board, Noise-Stop* Baffles

porters." They give their stories to the Personnel Department. After careful screening there, they are passed along to the firm's advertising agency. They handle the editorial processing, since their experience allows them to produce the company paper in the most economical manner.

DUPPLICATING

thought Starter

Firm mechanizes purchase order writing with duplicating unit

By mechanizing its purchase order writing procedures, the Purchasing Department of the American Machine & Foundry Company has speeded its parts and supply procurement, and currently realizes \$3,500 savings annually in forms cost alone.

Purchase orders total about 35,000 annually. The former method utilized a multi-copy carbon-interleaved set of purchase orders, with a spirit hectograph carbon insert. This limited the number of purchase order copies to be produced by a single typing. It was necessary to type a separate inquiry form.

Since multiple copies of these individual records are needed for the proper control, communication, and recording functions, they decided that duplicator equipment could produce the required number of Quotation Inquiry copies.

Purchase Requisitions and Buy Cards authorize the Purchasing Department to analyze the requirements and select possible sources of supply for Quotation Inquiry purposes. Quotation Inquiry masters are preprinted in non-reproducing ink. A master is typed, and the original number of inquiry forms are duplicated (two for each possible vendor), plus another master from the first. The latter one becomes the Purchase Order master, which is a duplicate of the Quotation Inquiry, and is filed for use in the Purchase Order phase.

By using this duplicator unit, the department has excluded all repetitive writing, provided a progressive record of all actions in the entire Purchasing-Receiving Cycle, as well as eliminated expensive transcription errors and hand-posting on control records.

work center

"... men and machines

don't work in a vacuum.

Though you may saturate
your Work Stations with
skilled workers and
modern tools, they can pro-
duce efficiently only when
'community' factors like
traffic control, and ade-

quate lighting, and proper
communications — and
even creature comforts —
are properly integrated."

"integrated office

- 1 PACKAGE SYSTEMS
- 2 WINDOW AND CONSOLE UNITS
- 3 CENTRAL SYSTEMS

3 ways to air condition older office buildings

by Bernard Eichwald

Eichwald Associates, Consultant Engineers, New York

Any office building, regardless of age, can be fitted with air conditioning—greatly improving working conditions, increasing efficiency and morale. In most cases, however, there is one system which, from the point of view of efficiency and economy, will be better than others for a given location. The type best suited for each office, floor, or building can only be diagnosed by experts who make a complete appraisal of the location (see chart).

In general, the selection of air conditioning can be narrowed down to three basic systems: the air or water-cooled package system; the air-cooled system of window and console room units; and the central system which

usually depends upon piped water and cooling towers for condenser cooling. A fourth type is the well water system, which is the most economical for large rural offices, but impractical in the city.

Package systems

Most air conditioning experts consider package systems the most economical for small buildings, entire floors or suites, or large office areas. Water-cooled package systems range in size from two to twenty-five horsepower. Units up to five h.p. can usually be supplied by existing plumbing facilities, if the building has no cooling tower. For units over five h.p., a cooling tower is necessary. Air-cooled package

units which deliver up to three horsepower of cooling have recently been developed for use in areas such as New York City where water is prohibitive in cost or unavailable for cooling. Package units, both water and air-cooled, supply conditioned air through ductwork, and are usually placed outside of the conditioned space to allow productive use of office space. Package units provide no individual temperature control. Advantages are:

1. Ideal for smaller areas within buildings which do not have central air conditioning systems.
2. Cost less per square foot to install than central systems since less remodeling is necessary. (next page, please)

FACTORS that determine the method you will use

Amount of **SPACE** to be conditioned — a single office, floor, or entire building.

Amount of **MONEY** available for equipment and installation.

Extent of **REMODELING** required for various systems.

Extent of additional **ELECTRICAL LOAD** which the building could support and cost of additional wiring.

Availability of **SPACE FOR DUCTWORK** and various types of units.

Source and availability of **WATER**.

Sources of outside **AIR**.

LAYOUT of the single office, floor, or building to be conditioned.

Local building **CODES** and zoning regulations.

LEASE arrangements between building and tenants.

CLIMATIC CONDITIONS characteristic of building's locale.

Internal **HEAT LOAD** (number of people, lighting, etc.).

Individual consolette window unit at Gulf Building.





The Standard Oil Company of Ohio, Cleveland, Ohio. Architects: Garfield, Harris, Robinson and Schafer

Sohio transforms garage into modern offices made permanently efficient with Mills Walls

Faced with the necessity of expansion in office space, The Standard Oil Company of Ohio converted a downtown Cleveland garage building into attractive, efficient, modern offices with interiors of Mills Movable Metal Walls. While other remodeling work on the building was in progress the interiors were fabricated at the Mills factory, permitting Sohio to take early occupancy of its new offices.

But the most important advantage of Mills Walls for Sohio is the *space control* they provide. Whenever changes in space requirements occur, these walls can be rearranged to fit new layouts—usually overnight or during a week end, with minimum labor and at very low cost. They promote efficiency by facilitating the most effective use of space at all times.

With this efficient flexibility Mills Walls combine distinctive architec-

ural design, all-welded panel construction and unexcelled structural stability. They are thoroughly insulated and sound-proofed and have easily accessible raceways for electrical wiring and controls.

As modern and attractive as they are efficient, Mills Walls are available in a wide range of restful colors with baked-on enamel finishes specially treated to eliminate all harsh light reflection. They require no maintenance except occasional washing to keep them looking always their efficient best.

THE MILLS COMPANY
959 Wayside Road, Cleveland 10, Ohio

MILLS

Movable

METAL WALLS

(Circle 289 for more information)

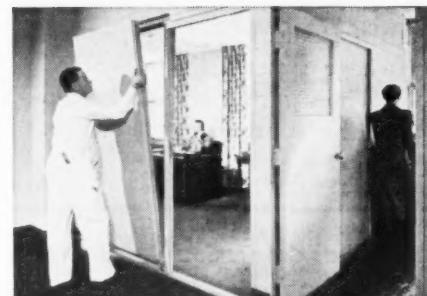
3. More efficient for large areas than individual room units.

The average cost for installation of the package system in existing buildings is \$4 to \$5 per square foot, though there may be considerable variation depending on individual circumstances.

Window and console room units

By far the easiest to install, and the least expensive system, is the air-cooled room unit, which must be located at the window or other source of outside air. The units require no ductwork or pipes. In some cases, however, ductwork may be added to consoles to carry conditioned air to adjacent offices. These units solve the problem of conditioning individual offices without the expense of either a central or package system, though separate electrical circuits are most often necessary. In sufficient quantity, they may be used to condition whole floors or even entire buildings. One such case, reported in MANAGEMENT METHODS (January 1954), was the Gulf Building in Pittsburgh, Pennsylvania, where management decided to install 900 room air conditioners. A central system for this building would have cost between \$1,500,000 and \$2,000,000, while the total cost of window units was around \$300,000. Another factor which weighed in favor of window units was the inability to install a cooling tower for salvaging condenser cooling water. Lack of a cooling system would have greatly increased the operating cost of a central system.

It is important to bear in mind, how-



Mills Walls can often be moved in a matter of hours—without dust, debris, commotion or interruption of normal business routine.

Write for the new 68-page Mills Walls Catalog—it's a practical work book on Space Control.

A window unit in one of the executive offices of the Gulf Building.



methods

ever, that while room units are most economical for certain locations, they may be less efficient and more costly in the long run for others. This must be determined by a thorough survey. Advantages of air-cooled room units are:

1. Economy of operation during intermediate seasons when natural, cool, outside air can be utilized for ventilation.
2. May be moved if office moves.
3. Relatively low maintenance costs.
4. Winter ventilation as desired.
5. Small enough in size so as not to require a licensed operating engineer demanded by many city codes.
6. Eliminates necessity of plumbing, water, and ductwork.
7. Easily adjustable for individual temperature and humidity needs.

Costs for room unit air conditioning have been reported for as low as \$2 and \$3 per square foot.

Central system

When modernization plans call for one system to completely air condition an entire existing structure, a large central-station water chilling plant is often selected. While the initial cost may seem high, it can offer the utmost economy of operation and maintenance in multi-room buildings. Furthermore, such a system has a longer life than the others described, and can be amortized over a longer period of years. This factor should be considered when calculating initial cost.

The central unit provides air conditioning for an entire building through one plant, with many individual outlets. All parts of the buildings are supplied with ventilation and circulation of filter-clean air, and each outlet gives individual control of temperature and humidity. The same installation may be utilized for winter heating by circulation of hot instead of chilled water.

This system, however, is not applicable to all type buildings, and when installed, requires extensive construction and alterations. In cases where a building is occupied by many tenants, the cost of a central system is beyond the reach of any one tenant.

The Starks Building of Louisville, the largest office building in Kentucky, was recently fitted with a central sys-

(cont'd page 44)

Extra wide



Royal's new, extra wide deep cushioned seats and backrests give luxurious comfort. Rugged, square tubular steel construction is fully welded throughout, for years of dependable service.

Handsome



Handsome Royal chairs are available in a number of smart designs and finishes—color co-ordinated to complement any office decorating scheme.

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EXECUTIVE-SECRETARIAL CHAIR COMBINATIONS BY ROYAL

Your secretary will sing (and be much more efficient) in her new Royal Secretarial Chair. You'll hum some yourself when you settle into the luxurious comfort of your Royal Executive Chair. (Comfort, by the way, which keeps you at your business best.) Handsome Royal combinations are available in a number of smart designs and finishes to harmonize with any office decor. And for wear . . . they're without peer. See these Royal pairs at your nearest Royal Dealer or write for literature.



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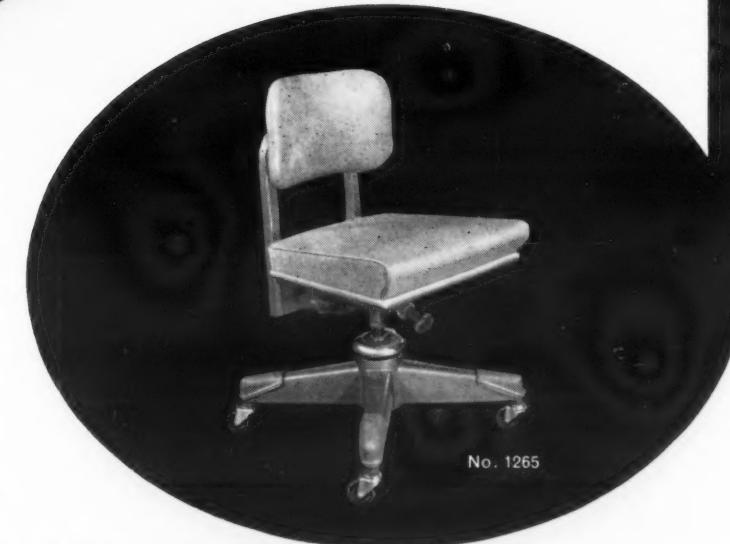
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(Circle 307 for more information)



Oak Plankweld® Paneling—President's office, Seneca Textile Division of United Merchants and Manufacturers Inc. Architect: Alfons Bach.

Offices With Dignity and Beauty Choose Weldwood Paneling

Weldwood hardwood paneling brings to the modern office a new but permanent beauty unmatched by any other type of wall covering. It's *functional* as well as *fashionable* because it's easy to maintain and will never need replacement.

COSTS LESS THAN YOU THINK! Modern Weldwood production methods make it possible for you to enjoy the beauty of real wood paneling at a lower initial cost than ever before. This, plus lower upkeep and the elimination of periodic redecorating expenses, should bring the wood paneling you choose well within your budget—you may even show a saving!

EASY TO INSTALL. Standard size 4' x 8' panels are easily installed over furring, with nails or by a new contact cement method. There is a minimum of fuss

and muss. Completely prefinished 4' x 8' panels are also available in some woods. Weldwood Prefinished Plankweld® Panels (16½" wide x 8' high) are edge grooved and can be installed directly over present wall by a method which completely eliminates face nailing.

CHOICE OF WOOD FACES. Birch, African mahogany, Philippine mahogany, white oak, sliced walnut, knotty pine, elm and Korina® are some of the many Weldwood panels immediately available. Any wood face may be had on order.

LIFETIME GUARANTEE. Weldwood hardwoods are unconditionally guaranteed for the life of the building.

Further information is available at any of the 73 United States Plywood or U.S.-Mengel Plywoods showrooms, in principal cities, or mail coupon.



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**UNITED STATES
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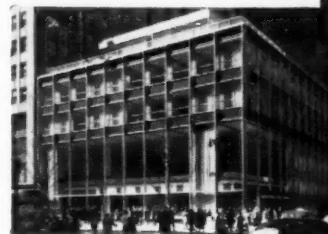
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THE MAN
Horace C. Flanigan,
President

THE COMPANY
Manufacturers Trust
Company

THE DESIGNER
Eleanor Le Maire



ONE OF THE MOST widely-publicized business structures in recent years is the new Manufacturers Trust Company building in New York. Extremely modern and high-style, it has carried this treatment into the executive offices.

The new building is not the "head office" of Manufacturers Trust. However, since much of company's business encompasses the midtown section in which it is located, Horace Flanigan, President, has an office in the new quarters. Because of the unusual design of the building, it was necessary to maintain a consistent decor. Thus, in the private offices, there is less emphasis than might be expected on individual desires or personality of occupants.

The President's office is used as a reception and conference room for the bank's more important customers. It is located on the fifth floor (executive), and is one unit of a series of connecting offices. It has direct access to the director's lounge, board room, and executive dining room. The office of the secretary, though actually a part of the President's office, is separated from it by two wide corridors leading directly to it.

The treatment and furnishings vary only in color and textures from that throughout the branch. The marble floors are carpeted in a neutral brown. Walls are teak-paneled or a natural colored fabric. Translucent, glass fiber curtains screen the wide window

the work

CES SUCCESSFUL MEN



areas. The use of leather in upholstered furniture is widespread, with emphasis on natural shades of brown, bronze, and redwood. Modern art, in sculpture and painting, highlight the decor. m/m



thods

march 1955

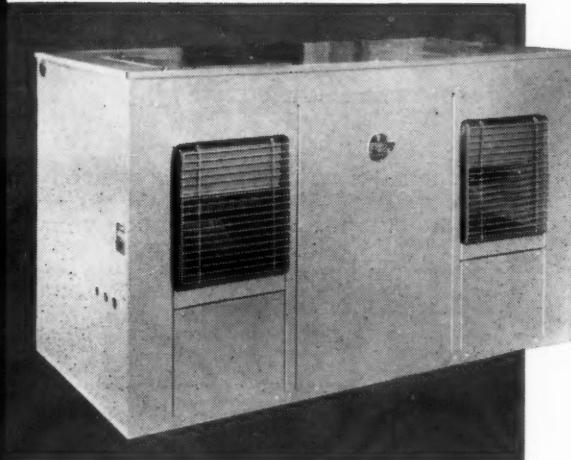
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COSTS LESS to install • to operate • to maintain



5 H.P. waterless model—one of four models. A size to suit almost every air conditioning requirement.

Even if you now own air conditioning you should read these facts on Airtemp Waterless (air-cooled) air conditioning. They may save you money.

COSTS LESS TO INSTALL—these new packaged air conditioners don't use even one drop of water so you save on plumbing costs. No cooling tower or evaporative condenser either.

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You can forget all about increases in water rates and restrictions on the use of water, too, when you get Airtemp Waterless air conditioning.

This new advancement in air conditioning is built and backed by the world's largest manufacturer of Packaged air conditioning, Airtemp Division of Chrysler Corporation. Call your Airtemp dealer—he's in the Yellow Pages.

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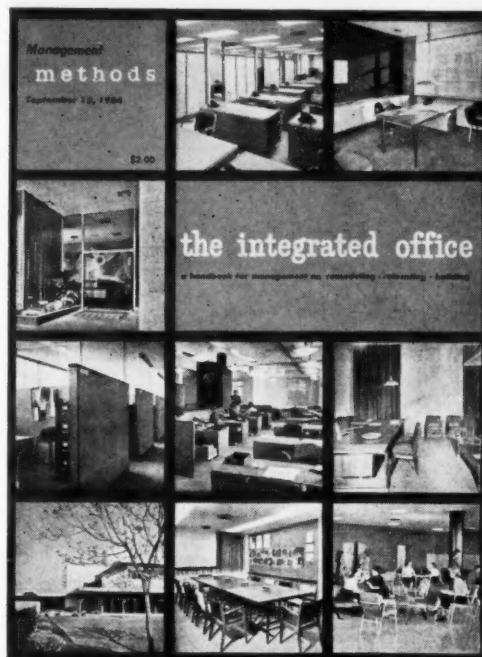
AIR CONDITIONING • HEATING FOR HOMES, BUSINESS, INDUSTRY

(Circle 260 for more information)

*The only publication
of its kind*

the integrated office

*a handbook for management on
office remodeling, relocating, building*

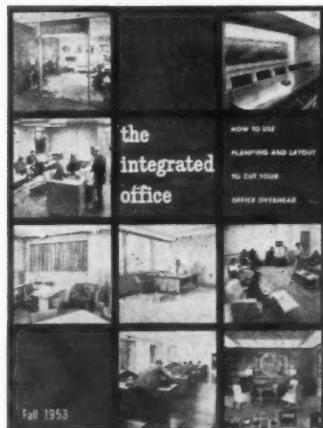


If you have been thinking about remodeling, moving, enlarging your offices, here's a practical, down-to-earth guide that will save you hours of trial and error planning. This year's issue is crammed full of solutions to management's most pressing problems:

How to select new quarters
How much does it cost to move
How to modernize on a long-term plan

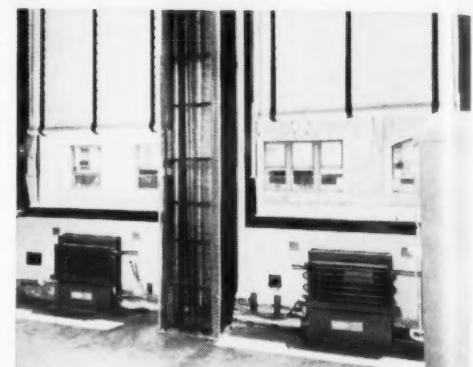
How much does it cost to redecorate
How to handle sale and lease-back of property
How to expand an existing building

Each of these questions—and this is only a *partial* table of contents—is written by a recognized expert in terms of his experience with well-known firms. Dozens of photographs and plans guide your selection to the proper solution to your needs. To order, use the postage-paid order card bound into this issue. We'll bill you later. **only \$2.00**



A FEW COPIES OF THE 1953 ISSUE STILL AVAILABLE

The 1953 edition of THE INTEGRATED OFFICE covered completely different subject matter. Its general theme was a detailed breakdown of the factors involved in office layout and planning. Together, the two issues provide a complete "package" for the business concerned with office layout, building, furnishing, and renovation. While they last, 1953 copies are available at \$2.00. Use the special order card bound in this issue of MANAGEMENT METHODS.



ABOVE: Units and duct work installed in Starks Building. BELOW: Covering and masonry over units blend with building decor.



tem using high-velocity conduit risers serving under-the-window conditioning units. Two large 600-ton and 400-ton centrifugal refrigerating machines in the sub-basement provide cooling equivalent to the melting of two million pounds of ice every day. The chilled water is circulated to 1,582 room units and to other central system conditioning equipment. Three central system units and cooling towers are located on the roof. The building's 250,000 sq. ft. of rentable area was conditioned at an estimated cost of \$5.25 per square foot for installation. Between \$5 and \$6 is an average cost per sq. ft. for installing central systems.

Air conditioning pays for itself in greater employee comfort and increased efficiency, so it is no longer a luxury. It is a calculated cost which management can absorb as a legitimate expense. m/m

planning
idea

Fireproof plant
design reduces
insurance premiums

When planning to build a plant in a rural area, the Bert Mills Corpora-

tion of St. Charles, Illinois, was confronted with limited fire protection facilities and high insurance rates. They, therefore, called in insurance advisors at the initial planning stages of construction.

Now completed, the ultra-modern \$75,000 plant has been called "an object lesson" in fireproof design for other industrial firms planning to build in suburban areas.

Its main safety feature is a single-piece, 40,000 square-foot roof of poured



concrete, supported by concrete columns. Although this type of construction added about 35% to building costs, Mills considered it a worthwhile investment. The move was motivated by General Motors' recent experience when fire destroyed its Michigan automatic transmissions plant. Terrific heat buckled the steel columns, causing the roof to fall in.

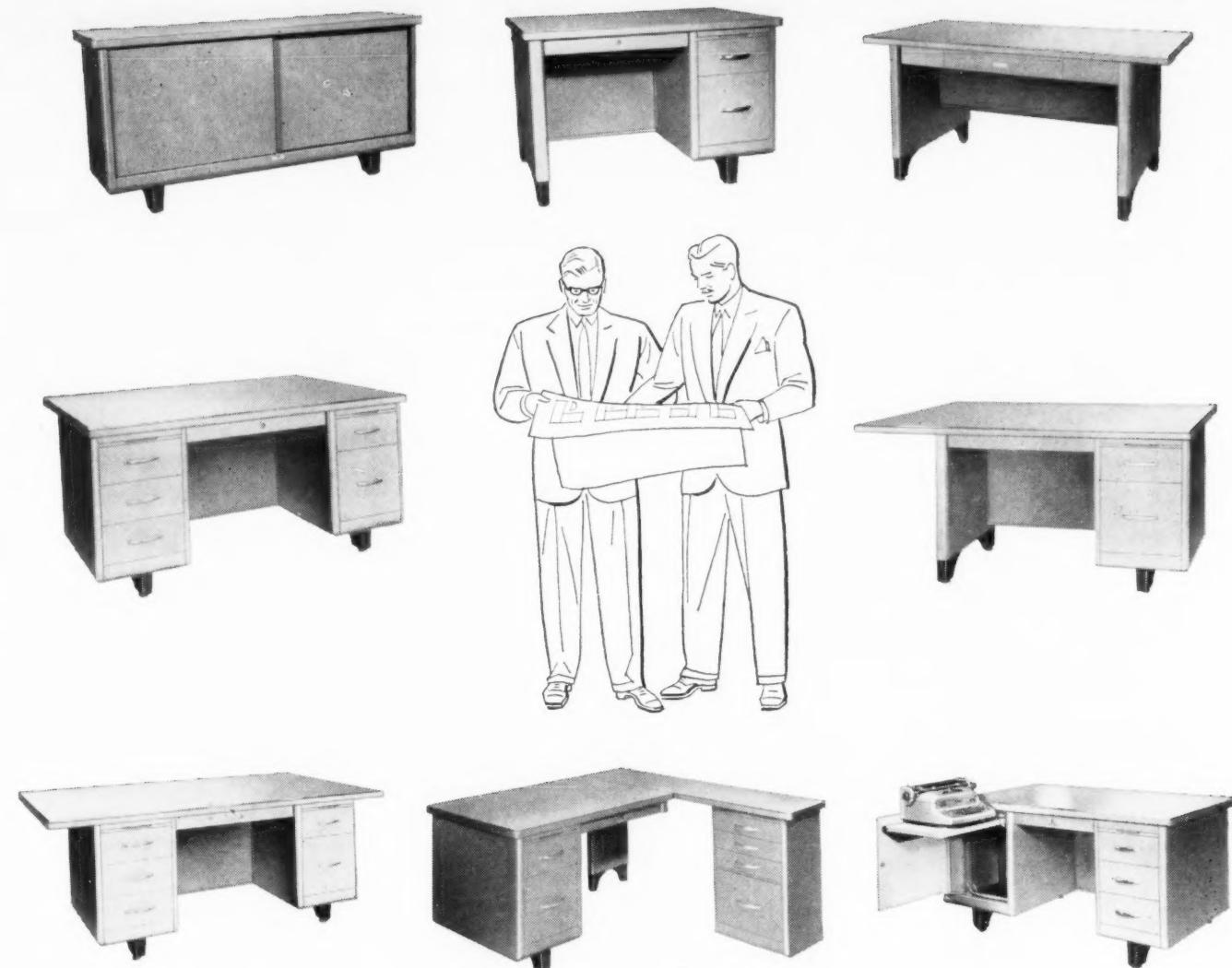
Insurance officials advised that fire-wall sections be built between the plant and offices, especially around the paint spray and paint storage areas. The departments were also equipped with automatic sprinkler systems. The firm dug its own water wells to assure a permanent water supply. Two fire hydrants were placed on diagonal corners of the plant, and an employee fire brigade has been trained to go into action the instant fire is discovered.

Such careful planning by Mills, and the advice of its insurance advisors, has meant minimum fire insurance premium rates for a factory structure in any rural area.

planning idea

1½ acre ceiling paint job completed in one weekend

In a non-stop, weekend marathon, 200 painters put three coats of paint on the one-and-one-half acre, first-floor ceiling of Macy's Westchester store in 38 hours. More than 60,000 square feet of ceiling and 108 columns were covered with a specially-prepared fast-



"Correlation" by STEEL AGE—

A Brilliant New Concept in Modern Office Planning!

From the very moment it was introduced, *Correlation* by STEEL AGE has been acclaimed as a truly significant advancement in better office planning. And no wonder! For it is the only desk line in America today that combines all of these exciting features:

1. Revolutionary, whisper-quiet nylon and Buna-N rubber rollers on all box drawers.
2. Smartly designed, unbreakable fiberglass pontoons.
3. Interchangeable components that allow each unit to grow with changing space and function requirements.
4. A completely correlated design, making possible the creation of dozens of multi-unit work areas.
5. Over 50 individual styles and many top materials and attractive finishes to choose from. (Eight typical styles shown above.)

And yet these new *Correlation* units—made to traditional STEEL AGE standards of highest quality

—actually cost less than most conventional steel desk units!

You'll be smart to call your *Steel Age* Dealer about *Correlation* today. For no other desk line can offer you so many features for top efficiency and convenience.



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The complete *Correlation* line is illustrated and described in new full color folder. Write today for your free copy.

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...the harder they fall for the VIP, sumptuous new chair designed by Sturgis for all men in big jobs and big men in all jobs. The VIP is a chair for front offices, where men of importance conduct affairs of importance.

The noble dimensions of seat and back, the lavishness of foam rubber nestling on steel springs are linked in a conspiracy of prestige and comfort. When you own a VIP, it will be for the rest of your business life!

In luxurious combinations of leather or elastic versilan with fine fabrics. Swiveling on either the exclusive Sturgis fiber glass base or the famous Sturgis streamlined metal base. A guest chair to match.



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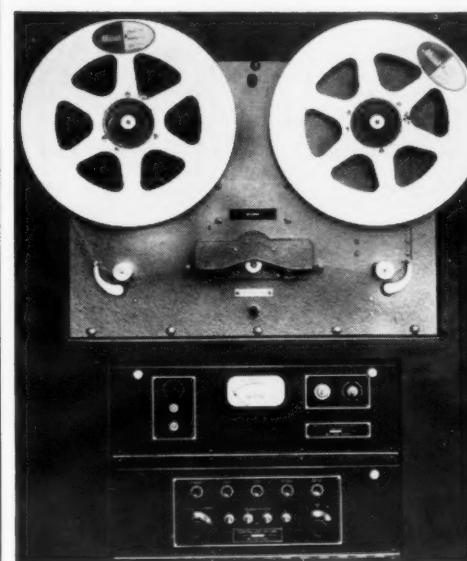
drying sealing coat, which dries in three hours.

One reason for the non-stop job was purely aesthetic: a continuous expanse of color without any laps or breaks. If painting is stopped, a line usually shows where it was resumed.

planning idea

New "on location" unit provides background office music

An automatic, self-contained, tape trans-



mission unit makes it possible to provide music to offices beyond the service areas of wired line networks. This unit is an extended service of the pioneer background music organization.

For more information, write to Muzak Corporation, 229 Fourth Avenue, New York, N. Y.; or circle number 394 on the Reader Service Card.

Unit clears smoke-filled rooms rapidly

Smoke-filled rooms may be purified in a matter of minutes with a newly developed portable air cleaner. The unit is an electrostatic precipitator, which traps air-borne particles by means of static electricity. Air is drawn into the machine through the bottom, and then is passed over a series of metal plates.

Originally developed for the relief of asthma and hay fever victims, it removes 99% of the pollen in the air. Since the unit is not a filter, it is not limited by the minuteness of the particles. The unit is



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30" x 15", and no installation is required.

For more information, write to the Raytheon Manufacturing Co., Waltham, Mass.; or circle number 379 on the Reader Service Card.

Mobile bench unit multiplies laboratory working space

A new mobile bench unit solves many laboratory space problems. It rolls along a laboratory bench on guide rails, adding five square feet of extra working space. Easily attached to the bench, the unit locks into any position, and may be rolled along to wherever it's needed. The surface measures 18" x 24" and extends to



24" x 30" when the flap is raised, and leg height is adjustable from 28" to 38".

For more information, write to Palo Laboratories, Inc., 81 Reade Street, New York, N. Y.; or circle number 385 on the Reader Service Card.

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Easy on the Eyes**

- Different "Seeing tasks" in the office demand different lighting accommodations. The desk worker of 50 may require twice as much light as his co-worker of 30 performing the same task. Also, two desk workers in the same department, one peering over fine printed matter, the other handling written business forms, need two entirely different levels of illumination. The first worker obviously needs the benefit of supplementary lighting.
- Sight Light is the perfect supplementary light for use in conjunction with overhead lighting.
- The accuracy and efficiency of the modern office depends on "Seeing Comfort." Only from Sight Light can you obtain the benefits of glareless, shadowless light. Type is clearer, figures sharper, reading so easier!
- Illustrated is Swivel Arm. Turns 360°, wafer-thin base never in the way. Latest decorator colors.



March 1955

"worth

Quality control in our changing times: Companies applying radioisotopes to quality control or other production operations are saving both money and materials, according to Edwin A. Wiggin, technical assistant to the chief of the isotopes division, U. S. Atomic Energy Commission. For example, the Carborundum Company, using radioactive thickness gages in the production of coated abrasives to measure the thickness of materials and final product, expects to save enough money on rejects and shutdowns in a few months to pay for the gages. Industry is also using radioisotopes for marking—tracing the location and/or movement of a particular object or specific batch of material. A third general category of radioisotope applications is to study wear. California Research Corporation, using the radiosotope method to determine the wear of piston rings with various lubricants, estimates it has been able to carry out in four years, at a cost of \$35,000, a test program that would have required 60 years and cost a million dollars by the method formerly used.

• •

Sales and market research: "The necessity for carefully conceived and expertly directed market research will be increasingly evident in the months ahead. In conducting such research, you can proceed on the basis that the consumer has purchasing power and that he is willing to spend it. The basic question is when will he spend it and at what rate. Top priority in merchandising today must be given to selling techniques and selling ability and to customer service. Neither of these subjects can be given their well-merited attention unless you have the facts, derived from scientific study of marketing problems, scientific accumulation of data and scientific evaluation of data. Then, and only then, can you put market research to work for you, and make it function as one of the most valuable management tools in your business." Don G. Mitchell, Chairman of the Board, Sylvania Electric Products, Inc.

repeating"



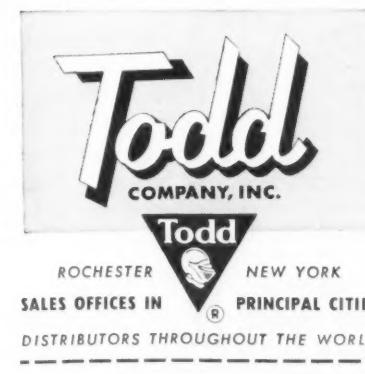
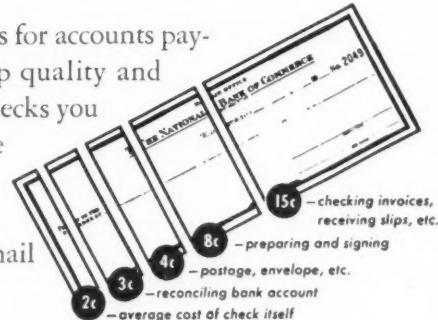
LOOK TWICE at your check-preparation costs

In a recent survey, The Todd Company found that it costs the average business 32¢ to write a check. The diagram below shows how these costs are distributed.

The biggest cost factors—accounting for 26 of the 32 cents—are the time and money consumed in checking invoices, preparing and signing, reconciling the bank balance.

With Todd procedures for accounts payable, you not only get top quality and guaranteed safety in the checks you use, but Todd analysts give dozens of time-saving suggestions and short cuts.

To get all the facts, mail the coupon below.



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Please send full details on the Todd Procedures for Accounts Payable.

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(Circle 326 for more information)

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keep tabs on costs

-with
ACCURATE
job time
records

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Agents in Principal Cities
Ask for a Demonstration
Call or Write Dept. 310



CALCULAGRAPH COMPANY
SUSSEX STREET, HARRISON, NEW JERSEY

(Circle 258 for more information)

SUMMER JOBS
screen students for
permanent positions

Searching for new talent for possible executive and professional positions, an Ohio pharmaceutical concern, the Wm. S. Merrell Company started a student summer employment program. Both management and the personnel staff felt that a better screening method was needed to aid in selecting college applicants applying for positions with the firm.

The plan was modeled after their Executive Development Training Program. Each student gains a working knowledge of the department in which he is employed, as well as learning its relation to other operational areas.

Each student is carefully selected from colleges in all parts of the United States. The qualifications are the same as those used in hiring permanent employees. The student must show evidence of good *idea-output*. If the desired qualifications are fulfilled, he is then brought to Cincinnati for multiple interviews with company executives.

At the end of the summer, each student is carefully appraised by his supervisors. The appraisal is made on the basis of progress and development over the three-month period the student has worked. They are also graded on a master grading sheet. This same sheet is used in appraising performance of permanent employees.

Both the student and the company have a chance to look one another over during this trial period. The program allows a student to develop business ability, ideas, and leadership qualities. The company has an opportunity to see exactly how or what he can actually do on a job before he is hired permanently. Although the program was started only two years ago, the Merrell Company is more than satisfied with results.

During the first year, students were hired to work, in selected areas of the country, with members of the sales force only. They were mainly pre-medical students. In the following summer, students were employed in the marketing, production, and medical research divisions. Plans for 1955 call for an increase in the number of students that will be hired. m/m

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Moistening...



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(Circle 328 for more information)



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✓ on any product or service described in MANAGEMENT METHODS, just circle the key number on the postage paid Reader Service Card bound into this issue and fill in your name, address, etc. If an item has no key number, merely state the subject matter in the space provided on the card.

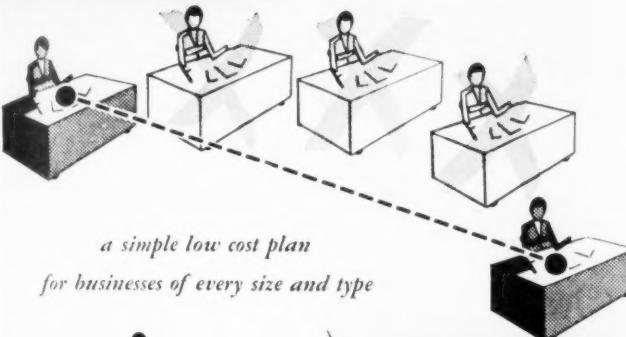


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... CATALOG OF PLAN

(Circle 283 for more information)

march 1955

**Permanent building veneer
of "sprayed-on" plastic**



The outside walls of the recently completed 15-story Carlton Hotel in Tyler, Texas, look like the smooth, finished walls of a modern living room. This effect was obtained by spraying on a plastic finish, instead of using any of the conventional veneer materials.

Although less than .035 inches thick, this flexible, non-combustible plastic skin is weather-proof, and is impervious to the effects of mildew, acids, and petroleum solvents. It is sprayed directly onto the concrete, and forms a continuous, jointless sheeting. The concrete, itself, is preserved, according to the manufacturer, because the plastic skin creates a curing condition for concrete by sealing it.

Simplified construction effects savings

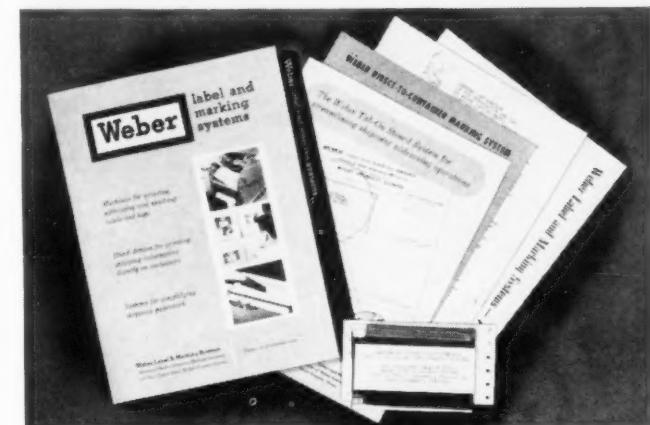
A substantial savings was made in the hotel's construction because of the tremendous simplification of exterior detailing and foundation construction. Ordinary veneer, like brick or metal sheeting, has to be supported by shelf angles, and adds weight to the structure. This, of course, means higher costs in the building's foundation and frame.

The average cost of material and labor for the plastic covering is 40c per square foot of surface. This veneer might be considered a permanent material. Only three to four maintenance treatments are required during the normal life span of a building, which consists of injecting plasticiser into the sheeting by covering it with a new top layer. Otherwise, the only maintenance required consists of simply washing the surface.

For more information, circle number 395 on the Reader Service Card.

This "free" file-folder kit
will show you...

How to simplify your shipping paperwork



NOTHING LIKE IT EVER BEFORE! Not a catalog of products, but a file folder of systems created to streamline shipment addressing and marking, and simplify shipping paperwork.

Cost-conscious firms have discovered that the key to efficient shipping and packaging operation is a fast, low-cost system for addressing and marking containers. That's exactly what this File-Folder Kit is about.

Described and illustrated are systems that make shipment addressing and product identification marking faster, cheaper and more accurate. You'll see how addressing operations can be tied-in with the preparation of shipping paperwork, and how the entire chain of events leading to the addressing and marking of your shipments can be streamlined. And there are also product samples that you can try out!

Never before has so much factual information been offered on this important subject—and it's all yours without charge or obligation. Make sure you get your Weber Label and Marking Systems File-Folder Kit right away!

Weber label and marking systems

Division of Weber Addressing Machine Co.
Mount Prospect, Illinois
Phone: CLEarbrook 3-2405



Weber Label and Marking Systems
Dept. 9C, Mount Prospect, Ill.

- Please send me a Label and Marking Systems File-Folder Kit.
- Also, we would like to talk to your representative as soon as possible about improving our shipment addressing and marking operations, and simplifying our paperwork.

Company _____

Individual _____ Title _____

Address _____

City _____ Zone _____ State _____

(Circle 315 for more information)

HOW TO FIND THE FACTS

...when you want them

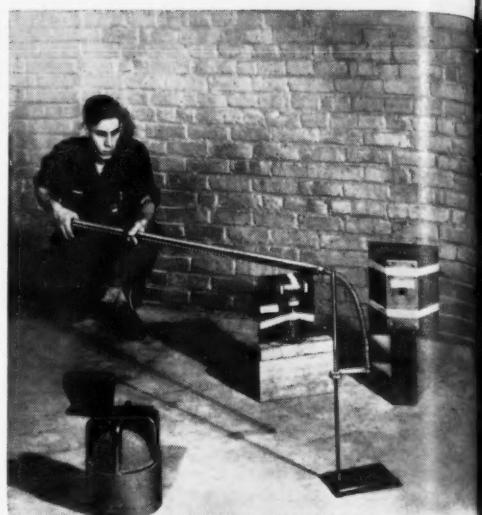
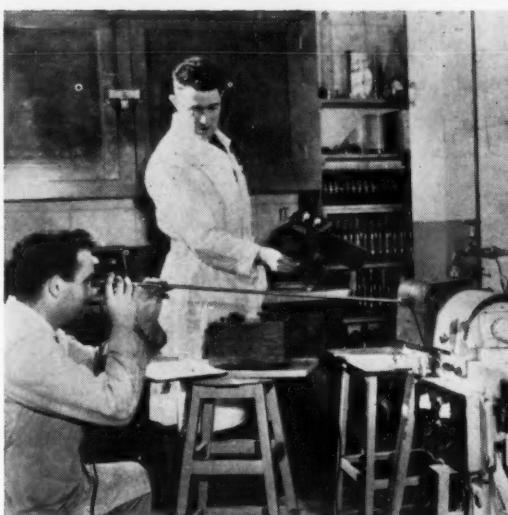


VICTOR BOOK VISIBLE

Nothing adds so much to your own personal efficiency as having all the facts in any record at your fingertips. With Victor Book Visible up to 118 record items can be reviewed at a glance. No matter what the record, Book Visible gives you surer, faster control... saves you time and money. See it at your stationer's today!

VICTOR SECTIONAL VISIBLE

Every advantage of Book Visible is combined with the capacity to grow, section by section, in Victor Sectional Visible. Sections stack rigidly to any convenient height. You buy only what you need when you need it. Ask your stationer for a demonstration.



LEFT: Two scientists conduct a gear wear testing project. By making an ordinary metal gear radioactive and using a geiger counter, wear testing can be accomplished in a few hours. RIGHT: A radiographer, using a Co-60 source, produces a radiograph which will show internal flaws of the object filmed. Equivalent to a 2,000,000 volt X-ray unit, the Co-60 source costs much less and is highly portable.



Wassell Controls at work at Dee Brass Foundry, Houston, Texas

"... SigNaLok Cabinets... control our customer's patterns and our raw material purchases. Our Produc-Trol Boards give us a visual picture of the status of each customer order... from the receipt... to final delivery."

Using these same tools, management in 15,000 other companies maintains effective, at-a-glance control of production, inventory, sales, and hundreds of other varied operations.

WASSELL ORGANIZATION, INC.

Westport... Conn.

I want to know how Produc-Trol and SigNaLok can help us in.....

Name.....

Title.....

Company.....

Address.....

City..... Zone... State.....

(Circle 325 for more information)

Using isotopes

Though most businessmen are thoroughly familiar with the phrase, "peacetime use of atomic energy," few relate the subject to their own operations. The potential uses for radioactive isotopes are seemingly limitless. Moreover, the cost is so low that it is well within the means of even the smallest firm.

For example, today \$280 worth of radioactive cobalt will do the work of \$10,000 worth of radium or will replace costly X-ray techniques. Radioisotopes are now used to "shine" rays through metal onto a film so that a flaw in a casting can be detected before it is machined. The same technique can be used to detect a weak point in a weld. By the same token, to find a leak in a pipeline, a technician need only run a millicule of radioactive iodine through the system. The leak can be located with a Geiger counter in 15 or 20 minutes.

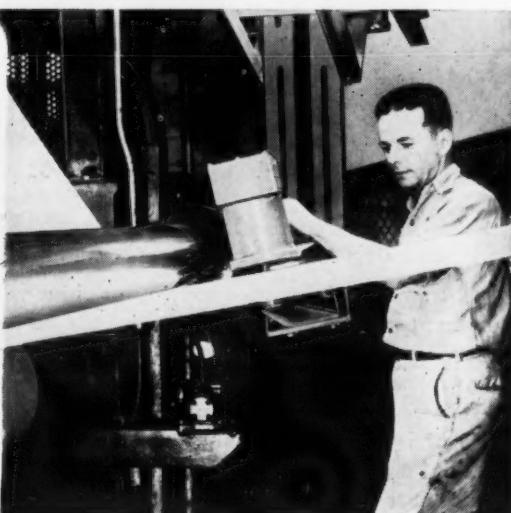
How much training is needed?

In spite of the fact that the field is new, there are already about 80 servicing laboratories throughout the country offering expert advice on the many uses of radioisotopes. Their technicians will perform all the handling of equip-

ment necessary. They'll help you develop applications. However, because of the many new uses that are developing and the relatively low cost involved, it is becoming increasingly advisable for companies to have their own trained personnel on the job as much as possible.

One firm, Tracerlab, Inc., of Boston, a pioneer firm in finding industrial uses for nuclear energy, has been giving informal training to workers of firms wishing to install equipment for using radioactivity. Recently this firm set up a curriculum designed to train personnel in the use of radioisotopes and to turn out radiographers in three days! A firm enrolled three or four of its employees in the new training program at a comparatively small group fee which includes manuals and charts to guide the trainees after they've become operators. A trainee should have a basic knowledge of college chemistry and physics or the equivalent practical experience. Anyone with previous X-ray experience is ideally equipped. Ingenuity is highly desirable, for new radioisotope uses turn up every day.

Contrary to common belief, there is little danger to the personnel using radioactive materials. To offset misap-



LEFT: By tagging mail carriers with Co-60, they can easily be located by a geiger counter, if lost or lodged in a pneumatic tube. **RIGHT:** Thickness of fine papers can be measured by a beta gauge, which emits beta rays through a moving sheet of paper to a detecting device. The number of rays that can pass through determine thickness. The beta gauge is an extremely sensitive thickness device and has no speed limitations.

for business

prehension among employees, however, Tracerlab recommends that no secret or mystery be made of the fact that radioactivity is being used at a plant. The subject should be explained in discussions and bulletins at every opportunity without making a big thing of it. There's no contamination problem. Although no one but trained nuclear scientists are permitted to handle radioactive material itself, your workers can be trained to make use of it in the protective containers in which it is supplied.

As an added safety factor, Tracerlab and a number of other companies have a "film badge service" to which firms may subscribe. Four badges of different colors, bearing the worker's name and number, are issued. A different badge is worn by the worker each week while the one worn the previous week is mailed to the laboratory for evaluation. If a subscriber wishes, the laboratory will notify him by wire should a film on any badge indicate that the wearer's dosage is nearing the limit of safety.

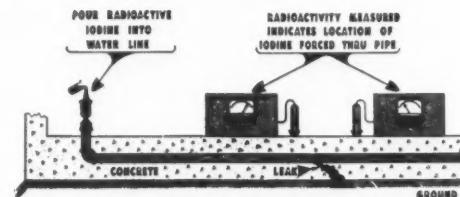
How much does it cost?

It costs about \$1,000 to equip a company for radiographic work. More and

more workers are learning to handle radioisotopes every day since the training is fast and inexpensive. It is no more dangerous to operate this invaluable tool than it is to handle a blowtorch or high-voltage electricity. Since isotopes used for radiography lasts from 5 to 33 years, servicing isn't usually necessary.

No special installations are necessary either, but if radiography is carried on frequently, it is a good idea to use a remote room free from traffic and apart from other workers, preferably with two outer walls. Any place not readily accessible will do for storing isotopes in their lead containers, though they should be well marked and locked. m/m

DETECTING LEAKS IN INDUSTRIAL EQUIPMENT



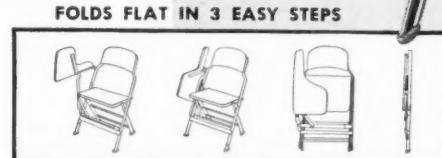
Radioactive iodine is used to detect leak in a water line. It is not necessary to remove floors, and because of the short half-life, there is no residual activity.

Learn about Amazing New Office Space Stretcher EXTRA Seating and Table Space at a Moment's Notice



The new Clarin Tablet Arm Chair that folds combines table and chair in one. You'll be amazed at how many people you can seat comfortably in a small office—and give each of them table space as well. Thus, you can hold those important group meetings in almost any office—and arrange it in a few moments. This space-saving chair is quality built—gives years of service—folds flat to 3-inch depth for fast, safe stacking in a minimum of space. Foam rubber cushioning if desired.

Write for full information:
Clarin Mfg. Co., Dept. 47,
4640 W. Harrison St.
Chicago 44, Illinois

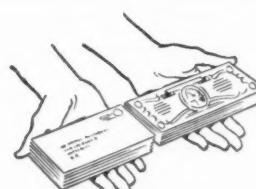


Clarin

*There is a Clarin Steel Folding Chair for your every need.
New FREE Catalog of complete line on request.*

ENGINEERED QUALITY MAKES THE BIG DIFFERENCE IN FOLDING CHAIRS

(Circle 261 for more information)



Weigh the consequences!

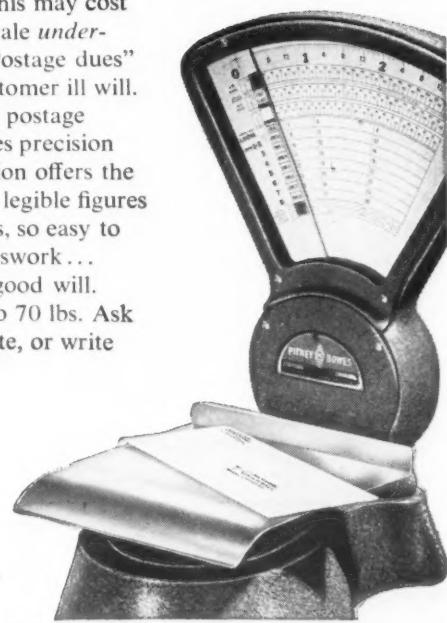
If your mailing scale overweights, you overpay. On just 12 letters daily, this may cost you an extra \$90 a year. If your scale underweights, you underpay. Result: "Postage dues" that delay your mail and breed customer ill will.

You can be sure of getting your postage money's worth with a Pitney-Bowes precision scale. Its automatic pendulum action offers the utmost in accuracy. And the large legible figures and widely-spaced graduation lines, so easy to read, eliminate eye error and guesswork... save postage dollars and protect good will. Other models for parcel post up to 70 lbs. Ask the nearest PB office to demonstrate, or write for free illustrated booklet.

FREE: Handy chart of Postal Rates with parcel post map and zone finder.

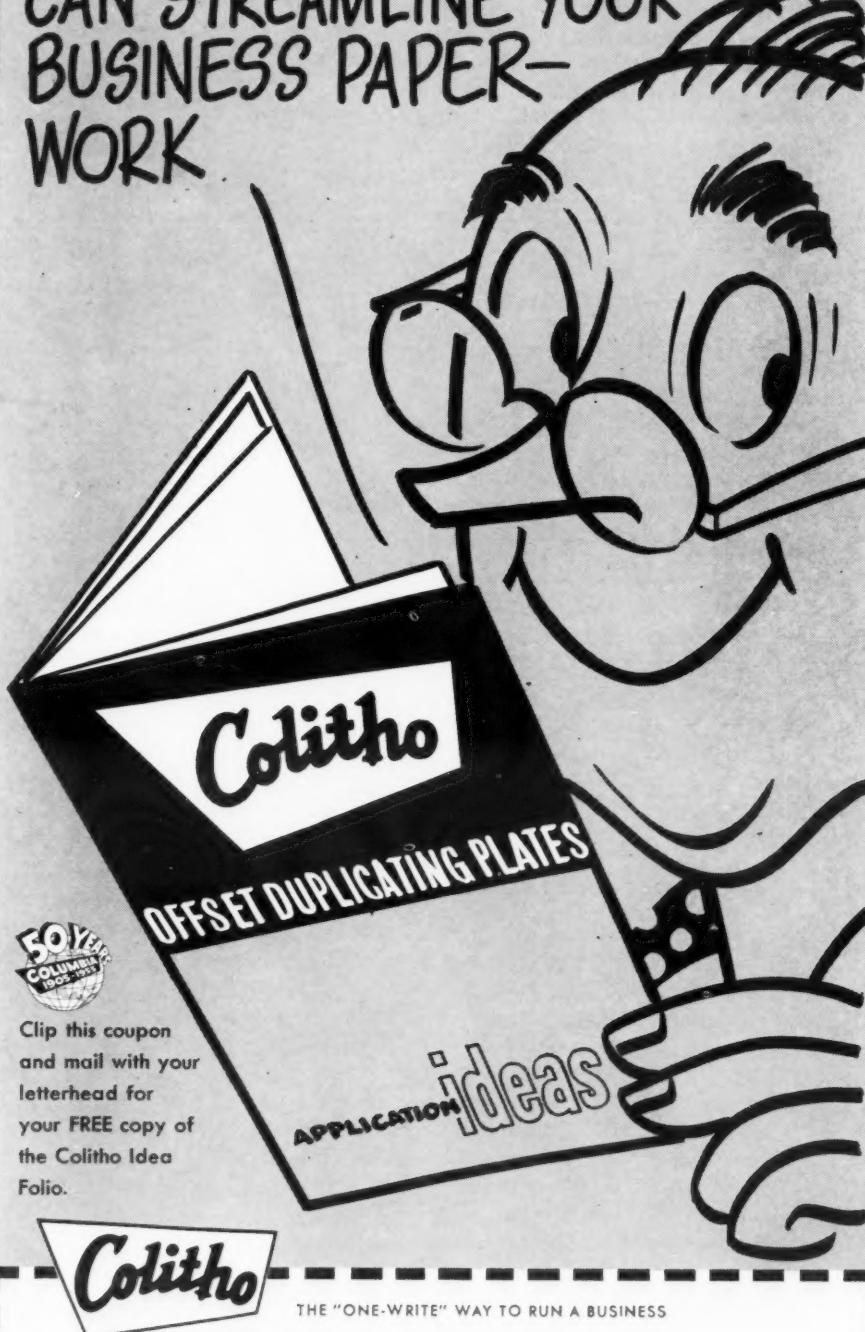
PITNEY-BOWES Mailing Scales

PITNEY-BOWES, INC.
4575 Walnut St., Stamford, Conn.
*Originators of the postage meter
...offices in 94 cities.*



(Circle 299 for more information)

IT'S FREE AND IT'S PACKED WITH IDEAS THAT SHOW HOW COLITHO OFFSET DUPLICATING PLATES CAN STREAMLINE YOUR BUSINESS PAPER-WORK.



Clip this coupon
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your FREE copy of
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THE "ONE-WRITE" WAY TO RUN A BUSINESS

Colitho Division, COLUMBIA RIBBON AND CARBON MFG. CO., Inc.
493 Herb Hill Road, Glen Cove, N. Y.

Send me the Folio of Colitho Application Ideas.

Name _____
Company _____
Address _____
City _____ Zone _____ State _____

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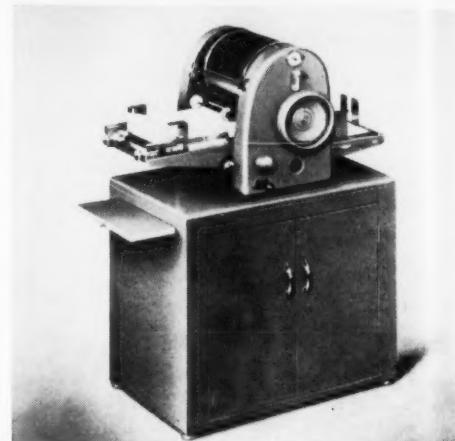
clippings

NEW LITERATURE AND PRODUCTS IN THE EDITOR'S MAIL

Machine makes dry copies without negatives or liquids

A completely new, dry copying machine makes error-proof, dry copies in about four seconds from printed, written, or drawn originals. The original may be transparent or opaque, printed on one side or both, and any color.

The machine employs a special light which acts upon a special copying paper. With no liquids, negatives, or master copies involved, it copies directly from the



original in one step. It operates in any open area, regardless of lighting conditions. Only a few minutes of instructions are needed. It is 17" wide x 17" long x 9" high, and uses 110-volt AC current.

To make a copy, the operator places a sheet of copying paper on top of the original, and inserts both into a slot in the front of the machine. The paper is carried automatically through the machine. It passes the special light and returns to the operator within four seconds, ready for immediate use.

For more information, write to Minnesota Mining and Manufacturing Company, Dept. G5-38, 900 Fauquier Street, St. Paul, Minn.; or circle number 388 on the Reader Service Card.



New metal loose-leaf binder for office binding needs

A new, metal, loose-leaf binder enables a duplicating department to bind anything



Low-cost mimeograph features dry inks and color duplicating

A new, low-cost, electric mimeograph features a full ream feed, an enclosed cylinder, hairline registration, variable speeds from 90 to 180 copies per minute, and a new dual roll feed that may be set to eliminate paper lint on copy areas or to avoid smearing pre-printed copy.

The enclosed cylinder permits use of

duplicated, printed, typed, or drawn, in either plastic or metal bindings. Standard-spaced punching permits the interchange. Pages may be inserted or removed anywhere in the book without taking the book apart. The metal loose-leaf binder will find its chief use wherever frequent page-changes are necessary.

The new binder is available in two basic wrap-around cover styles in a variety of colors. The covers, one a sturdy flexible plastic which is electronically sealed, and the other, a low-cost, serviceable imitation leather, can be imprinted or otherwise designed to suit the user's needs.

For more information, write to the General Binding Corporation, 812 W. Belmont Avenue, Chicago, Ill.; or circle number 378 on the Reader Service Card.



Book of simplified tables for computing depreciation

Since the Internal Revenue Code of 1954 revised the regulations for reporting depreciation for tax purposes, accountants

have a choice of method in computing depreciation of assets. After choosing one of the three methods, determining the final percentage to be applied to each asset involves complex calculation. A new book of simplified tables for use with the Sum-of-the-Year's-Digits method eliminates the tedious work of figuring depreciation for each asset.

| Year | 6 YEAR LIFE | | | | | | | |
|------|-------------|--------|--------|--------|--------|--------|--------|--------|
| | 1st | 2nd | 3rd | 4th | 5th | 6th | 7th | 8th |
| 1 | 28.57% | 26.19% | 23.81% | 21.43% | 19.05% | 16.67% | 14.28% | 11.90% |
| 2 | 23.81 | 24.21 | 24.60 | 25.00 | 25.39 | 25.79 | 26.19 | 26.58% |
| 3 | 19.05 | 19.45 | 19.84 | 20.24 | 20.64 | 21.03 | 21.43 | 21.81% |
| 4 | 14.29 | 14.69 | 15.08 | 15.48 | 15.88 | 16.27 | 16.67 | 17.06% |
| 5 | 9.52 | 9.92 | 10.31 | 10.71 | 11.11 | 11.51 | 11.91 | 12.31% |
| 6 | 4.76 | 5.15 | 5.56 | 5.95 | 6.35 | 6.74 | 7.14 | 7.53% |
| 7 | --- | .39 | .80 | 1.19 | 1.58 | 1.99 | 2.38 | 2.78% |

The tables show 17 different depreciation years from 3 to 50. After selecting the proper length of life, all that is necessary is to find the month placed in use, and apply the percentage shown to the asset cost for each year. The use of this book saves many hours otherwise needed by auditors and accounting personnel.

For more information, write to Walter Camenisch, Inc., 1501 Race Street, Philadelphia, Pa.; or circle number 390 on the Reader Service Card.

New complete catalog of tabulating equipment accessories

A new catalog details complete accessory equipment for all tabulating operations. The catalog contains illustrations, specifications, and full descriptions, including prices.

The following categories are covered: binders, desks, control panel cabinets, files, guides, racks, table-top trucks, card trays, and tub file equipment.

For a free copy of this catalog, write to Tab Products Company, 57 Post Street, San Francisco, Calif.; or circle number 392 on the Reader Service Card.



"Glider" blue print rack offers new filing system

A new "glider" blue print rack has created considerable economies in the filing and finding of blue prints.

The rack systematically files blue prints in index form. It stands 5 feet high, 4 feet wide, and 3 feet deep, and comes

NEW Master Paper for Direct Copying Machines

gives you the
clearest, sharpest
copies yet!



EAGLE-A TRANSLUCENT BOND

Ideal master paper for Bruning, Ozalid, Pease and other direct-print machines. With Eagle-A Translucent Bond as your original sheet, you can get better copying results every time. The improved translucency of this new master paper gives you cleaner, unclouded copies of records and forms.

High in quality, low in cost! Made of selected fibers, Eagle-A Translucent Bond has a smooth surface excellent for writing, typing or printing . . . and strong durability. You'll want to test its quality, compare its low cost. Available through Eagle-A distributors.



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AMERICAN WRITING PAPER CORPORATION
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Send FREE packet of Eagle-A Translucent Bond with printed samples and blank test sheets:

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TITLE _____

(Circle 329 for more information)

AMERICAN PRESENTS

NUMBERAMA

THE ALL-AMERICAN LINE FOR 1955

WRITE FOR FULL DETAILS

AMERICAN NUMBERING MACHINE CO, BROOKLYN 8, N.Y.

(Circle 254 for more information)

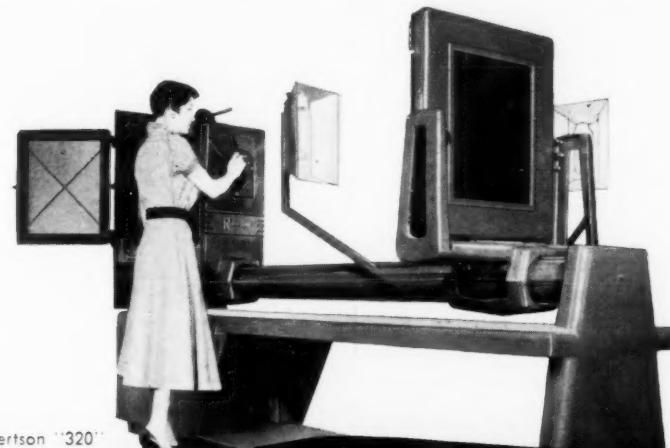
Binders for Management METHODS

Here's a specially designed binder that will hold 12 issues of Management METHODS without crowding. Looseleaf, pages open flat, with no part of the gutter of a page hidden from view. The maroon, leather-like hard cover allows volumes to be stored "on end" in your bookcase.



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Make halftones using either contact or glass screens

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Send now for your free copy of the "320" Manual of Operation, an illustrated booklet that shows how anyone can easily operate the "320" camera. No obligation.

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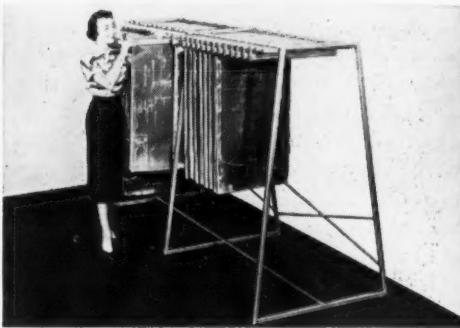
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- ★ Offset Duplicating
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- ★ Process Color Work
- ★ Photo Copying
- ★ Enlarging—Reducing
- ★ Blue Print Copying
- ★ Silk Screen Processing
- ★ Mimeographing



equipped with 12 plan holders. Extensions are available wherever more filing space is required. Each unit and each extension can hold as many as 1500 blue prints individually.

The holders are desirable because they do not require hole punching of prints. Each one holds from one to 100 prints. The individual prints or sets of prints are merely slipped into the holder and tightened into place by a very simple thumb screw operation.

For more information, write to the Momar Industries, 4323 West 32nd Street, Chicago, Ill.; or circle number 386 on the Reader Service Card.



Free trial bottle of duplicating ink remover

A specially formulated ink remover can be tested without cost or obligation. Available in cream or liquid, and pleasantly scented, the remover is simply rubbed on ink-stained hands and rinsed off. It performs with equal ease in removing stamp pad, carbon, and other ink stains.

For a free trial bottle of this ink remover, write to The Heyer Corporation, 1832 S. Kostner Ave., Chicago, Ill.; or circle number 384 on the Reader Service Card.



New booklet shows varied uses of textured vinyl covering

Many interesting decorating ideas using textured vinyl wall and furniture covering are illustrated in full color in a new booklet. The 12-page booklet describes the unusual properties of the covering, and includes a sample swatch.

For a copy of the booklet, write to L. E. Carpenter & Company, Inc., Empire State Building, New York, N. Y.; or circle number 387 on the Reader Service Card.

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with

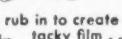
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no more clumsy
rubber fingers

or

messy sponges

apply between
fingers and thumb ..



rub in to create
tacky film ..



sort, collate,
count, file

Easy to apply, SORTKWIK creates a greaseless, stainless, tacky film permitting handling more papers much faster.

Now widely used in a variety of businesses throughout the country, SORTKWIK is setting a new standard for efficient and speedy paper handling.

Order a supply from your stationer TODAY! Or send ONE DOLLAR (\$1.00) for two regular size containers to try out.

Average 4 months
supply **50¢**



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Promotes Accuracy - Increases Production

PRICE INCLUDING
NEW TELESCOPIC
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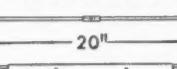
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TELESCOPIC EYEGUIDE

Accommodates all widths of copy from a machine tape to 20 inches.



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FREE TRIAL OFFER Write, asking us to send you a RITE-LINE Copyholder with the understanding you may return it without charge within ten days.

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(Circle 306 for more information)

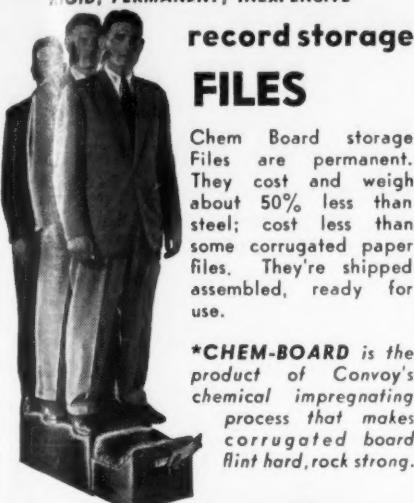
methods

HAVE YOU HEARD ABOUT . . . HAVE YOU SEEN
CONVOY "Chem-Board"*

RIGID, PERMANENT, INEXPENSIVE

record storage

FILES



Chem Board storage Files are permanent. They cost and weigh about 50% less than steel; cost less than some corrugated paper files. They're shipped assembled, ready for use.

*CHEM-BOARD is the product of Convoy's chemical impregnating process that makes corrugated board flint hard, rock strong.

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also makes a complete line of Tote Boxes, used by famous names in all types of industry.

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CONVOY, INC.

P.O. Station B, Box 216-M
Canton 6, Ohio

(Circle 264 for more information)



These modern steel wardrobe racks keep wraps aired, dry and "in press". End crowding of coats and hats in damp lockers or cabinets. Save floor space too—provide ventilated hat space, coat hanger (spaced apart from all others), built-in umbrella stand and overshoe shelf for 3 persons per sq. ft. 4 ft. No. 3-U rack (above) accommodates 12; No. S-6 customer (right) accommodates 6. Single or double (back-to-back) units in lengths to fit any available space. Strongly welded, heavy gauge furniture steel; baked enamel finish—modern office colors. Standard in offices, factories, schools, churches, clubs, restaurants and institutions.

Write for Bulletin OV-22

VOGEL-PETERSON CO.

"The Coat Rack People"

1121 W. 37th ST. • CHICAGO 9, ILL.

(Circle 313 for more information)

march 1955

Used corrugated cartons renewed with matched color paint

A new carton-colored paint is especially designed to help reduce shipping costs by utilizing otherwise discarded boxes. Many used cartons could be re-used by shipping departments if there were some way to mask old advertising printing or another company's name.

The repainted cartons look like new,



and dry to a finish in 20 minutes. The paint is odorless and non-flammable.

For more information, write to Luminall Paints, Div. of National Chemical & Mfg. Co., 3617 So. May Street, Chicago, Ill.; or circle number 393 on the Reader Service Card.



New stair climbing truck with power drive and brakes

A new stair climbing hand truck is equipped with a special ratchet mechanism which enables it to roll up stairs, step by step, as the operator pulls a cable drive. It safely increases the load a man can roll up or down stairs or ramps.

Two-wheel safety brakes are incorporated in the truck to prevent serious accidents when descending ramps or stairs with heavy loads, since they allow perfect control at all times. Features such as interchangeable shoes, sealed ball bear-



ings, and steel tube construction assure load flexibility and a long, efficient life.

The truck is equipped with large pneumatic tires which add to ease of operation and eliminate any marking of steps. Six different models are available for handling various sizes of loads including a special barrel cart and a complete welding cart.

For more information, write to Valley Craft Products, Inc., Div. of O'Neil-Irwin Mfg. Co., 750 Jefferson Avenue, Lake City, Minn.; or circle number 389 on the Reader Service Card.

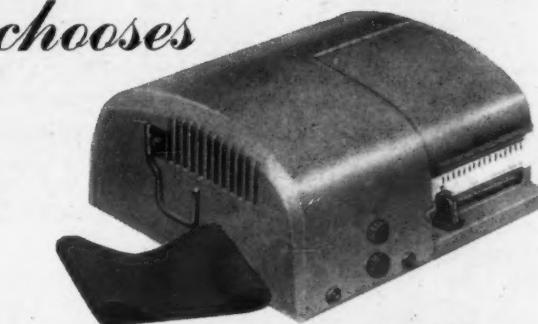
New offset solution improves quality of offset printing

A new "starting" solution for direct image paper plates used in general offset duplicating is applied to the direct image paper plate to condition the plate surface. The plate then readily accepts ink and fountain solution, resulting in fine, sharp, clean copies immediately.

For more information, write to Columbia Ribbon & Carbon Manufacturing Company, Glen Cove, N. Y.; or circle number 377 on the Reader Service Card.

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largest insurance
companies in
America chooses
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The world's most advanced dictation system, with exclusive design — performance that combines all 10 most wanted features, plus Instant Thought Review, Precision Engineering . . . Minimum Service . . . Full 15-Minute Recording . . . Transcriber Speed Control . . . Absolute Interchangeability of Reusable Magnetic Belts . . . Years Ahead Styling . . . Combines Both Dictating — Transcribing . . . Error-Free Dictation . . . 2 Week Free Trial in your own office under your own conditions.

NOW—YOUR CHOICE OF 3 NETWORK SYSTEMS

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Lowest cost network dictation for lighter, less frequent dictation.
2. Heavy Duty Network
Network dictation for offices with heavy dictation loads.
3. Newest Development
Network Dictation associated with your regular telephone.



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(Circle 297 for more information)

NOW!

Quickly, Easily, Effectively Destroy confidential papers, records in your own office!

NEW SHREDMaster Bantam 10

portable shredding machine designed especially for office use! Quiet, compact, streamlined!

Never before an office shredding machine combining the speed and economy of the new SHREDMaster BANTAM 10. Anyone can operate it. No fuss, no trouble! Greater cutting width, speed, capacity, and power than ever before! Safety throat! Smart functional design, about size and weight of business typewriter.

Priced well within the budget of all businesses - large or small.



FREE: Colorful, illustrated, descriptive folder, includes 10 DAY FREE TRIAL DETAILS. Write "SHREDMaster BANTAM 10" on your letterhead or postcard, and mail today to:

The SHREDMaster Corporation

A Division of Self Winding Clock Company, Inc.

199 Willoughby Avenue
Brooklyn 5, N.Y.

Priceless Security at Low Cost

A new type of office machine, the Shredmaster Bantam 10 portable shredding machine, quickly and effectively destroys confidential office records and correspondence. You eliminate danger of vital papers falling into hands of unauthorized individuals.

What makes the Shredmaster Bantam 10 ideal for office usage is that it is attractive in appearance, quiet, compact, and streamlined. It plugs in just like an electric typewriter or adding machine, and is immediately ready to operate.

Made by The Shredmaster Corporation, known throughout the world as the leading manufacturers of shredding machines, the Shredmaster Bantam 10 can be operated by clerks, stenographers, or other office help.

A Free Shredmaster Bantam 10 brochure is available without charge simply by addressing a letter or postcard to

The Shredmaster Corporation
199 Willoughby Avenue
Brooklyn 5, N.Y.

(Circle 309 for more information)

Contemporary design chairs feature combination leather-fabric covering

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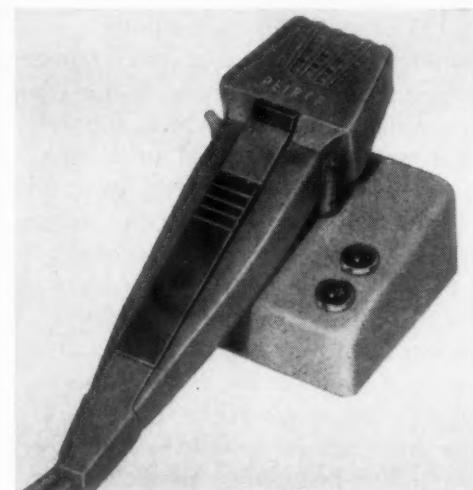
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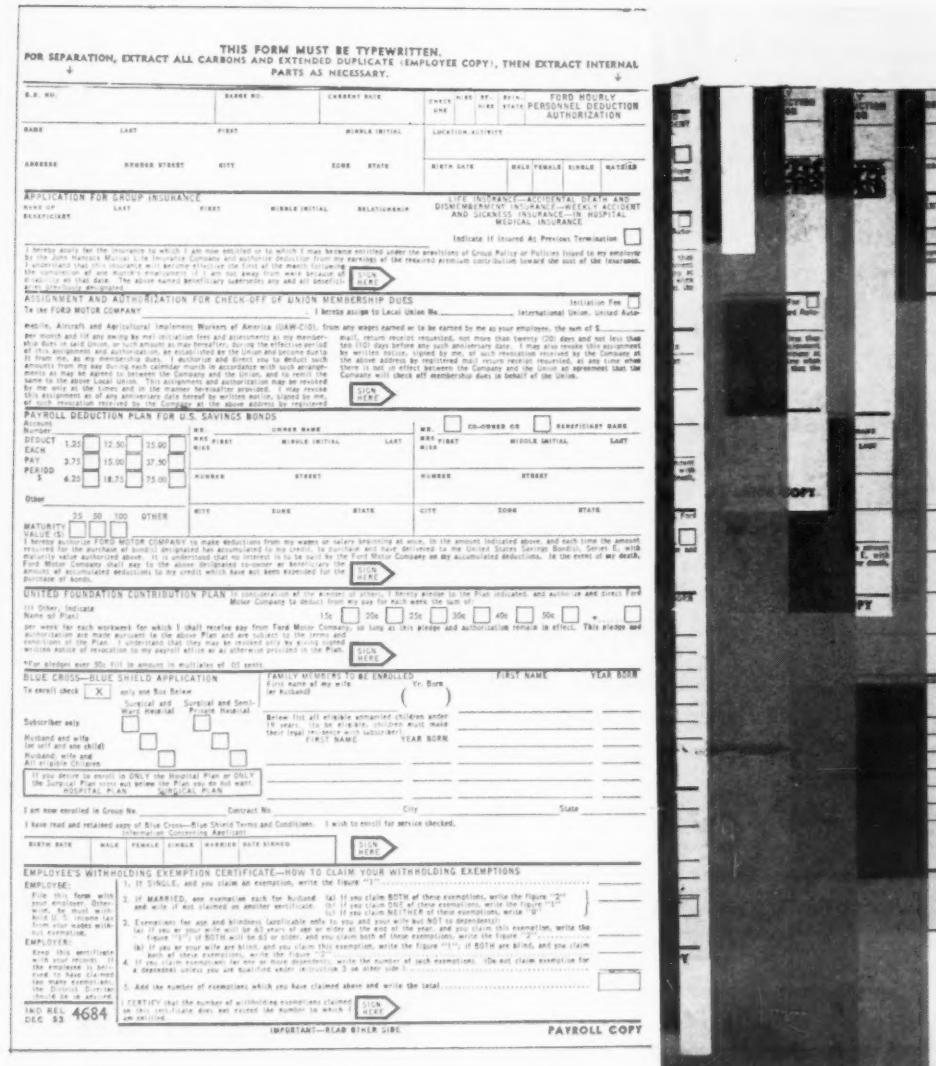
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